SOIL SURVEY

Meigs County, Tennessee

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
In cooperation with
TENNESSEE AGRICULTURAL EXPERIMENT STATION
Issued March 1974

Major fieldwork for this soil survey was done in the period 1962–67. Soil names and descriptions were approved in 1968. Unless otherwise indicated, statements in the publication refer to conditions in the county in 1968. This survey was made cooperatively by the Soil Conservation Service and the Tennessee Agricultural Experiment Station. It is part of the technical assistance furnished to the Meigs County Soil Conservation District.

Either enlarged or reduced copies of the soil map in this publication can be made by commercial photographers, or they can be purchased on individual order from the Cartographic Division, Soil Conservation Service, United States Department of Agriculture, Washington, D.C. 20250.

HOW TO USE THIS SOIL SURVEY

THIS SOIL SURVEY contains information that can be applied in managing farms and woodlands; in selecting sites for roads, ponds, buildings, and other structures; and in judging the suitability of tracts of land for farming, industry, and recreation.

Locating Soils

All the soils of Meigs County are shown on the detailed map at the back of this publication. This map consists of many sheets made from aerial photographs. Each sheet is numbered to correspond with a number on the Index to Map Sheets.

On each sheet of the detailed map, soil areas are outlined and are identified by symbols. All areas marked with the same symbol are the same kind of soil. The soil symbol is inside the area if there is enough room; otherwise, it is outside and a pointer shows where the symbol belongs.

Finding and Using Information

The "Guide to Mapping Units" can be used to find information. This guide lists all the soils of the county in alphabetic order by map symbol and gives the capability classification of each. It also shows the page where each soil is described and the page for the woodland group in which the soil has been placed.

Individual colored maps showing the relative suitability or degree of limitation of soils for many specific purposes can be developed by using the soil map and the information in the text. Translucent material can be used as an overlay over the soil map and colored to show soils that have the same limitation or suitability. For example, soils that have a slight limitation for a given use can be colored green, those with a moderate limitation can be colored yellow, and those with a severe limitation can be colored red.

Farmers and those who work with farmers can learn about use and management of the soils from the soil descriptions and from the descriptions of the capability units.

Foresters and others can refer to the subsection "Use of the Soils as Woodland," where the soils of the county are grouped according to their suitability for trees.

Game managers, sportsmen, and others can find information about soils and wildlife in the subsection "Soil Interpretations for Wildlife Habitat."

Community planners and others can read about soil properties that affect the choice of sites for nonindustrial buildings and for recreation areas in the subsection "Use of the Soils for Community Development."

Engineers and builders can find under "Engineering Uses of the Soils," estimates of soil properties and information about soil features that affect engineering practices.

Scientists and others can read about how the soils formed and how they are classified in the section "Formation and Classification of the Soils."

Newcomers in Meigs County may be especially interested in the section "General Soil Map," where broad patterns of soils are described. They may also be interested in the information about the county given in the section "General Nature of the County" at the beginning of the publication.

U.S. GOVERNMENT PRINTING OFFICE: 1974

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

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Issued January 1974

SOIL SURVEY OF MEIGS COUNTY, TENNESSEE

BY ROBERT B. WARREN, SOIL CONSERVATION SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, IN COOPERATION WITH THE TENNESSEE AGRICULTURAL EXPERIMENT STATION

MEIGS COUNTY, in the southeastern part of Tennessee (fig. 1), has a land area of 122,240 acres, or 191 square miles. Decatur, the county seat and principal town, is in the approximate center of the county, about 50 miles northeast of Chattanooga.

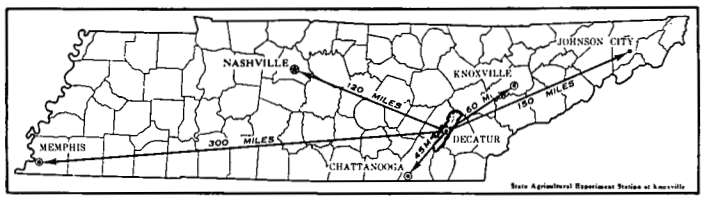

Figure 1.—Location of Meigs County in Tennessee.

The county is within the Great Valley of East Tennessee. It is an area of ridges and valleys. Long, high ridges separated by narrow valleys extend through the county in a southwest-northeast direction. The tops of the ridges generally are 300 to 400 feet higher than the lowest places in the valleys. Elevations of the highest parts of the ridges range from 1,000 to 1,100 feet, and those of the valleys range from 700 to 800 feet.

The county is drained by the Tennessee River, which forms the boundary with Rhea County. Parts of two large lakes—Chickamauga and Watts Bar—are in Meigs County. These lakes were made by dams on the Tennessee River.

General Nature of the County

This section briefly describes the development of Meigs County, and gives facts about the population and the main sources of income. It also describes the climate of the county and gives information about farming. The agricultural statistics used are from records of the U.S. Bureau of the Census.

Meigs County, formerly a part of Rhea, Roane, Hamilton, and McMinn Counties, was established in 1836. The early settlers mostly came from the southwestern part of Virginia, from the upper part of Tennessee, and from North Carolina. They cleared small fields from the dense and dominantly hardwood forests which covered Meigs County at that time. Since then, about three-fourths of the land has been cleared.

In 1960, the population of the county was 5,160. Decatur had a population of 681. Although Decatur is the trading center within the county, the main trading centers are Chattanooga, Cleveland, and Athens, in adjoining counties.

Crops, livestock, and livestock products, as well as nonfarm employment are important sources of income. Income derived from nonfarm employment may equal or even exceed that derived from farming. A large number of residents of rural communities work in factories in adjoining or nearby counties. Many of these nonfarm employees live along the main highways on tracts ranging from lot-size to a few acres. About one-third of the workers in the county have jobs outside the county. (*3*).[1] In 1960, 58.7 percent of the population was classified as rural nonfarm.

Farming

About 63 percent of Meigs County was farmland in 1964. A few large forested tracts, largely on high ridges, are owned by commercial companies for the production of pulpwood and timber. In 1964 there were 464 farms in the county. Most of the farms range between 10 and 500 acres in size, but 20 farms are less than 10 acres and 17 are more than 500 acres. In 1964 the average farm size was 166 acres.

Livestock farming and dairy farming are the most important sources of farm income, but income from crops is also important. Tobacco is the most important cash crop, but corn and vegetables are also grown as cash crops. Pasture and hay occupy the largest total acreage. The main pasture plants are tall fescue, lespedeza, and some orchardgrass.

Climate [2]

Meigs County receives abundant annual rainfall and experiences relatively mild winters and warm summers. The climate of this area is primarily influenced by cold air currents moving southward from Canada and warm, moist air currents moving northward from the Gulf of Mexico. These alternating currents frequently bring sharp daily changes in weather and are chiefly responsible for seasonal variations.

Precipitation.—Weather records taken at Decatur represent fairly well the local climate, but they are not en-

[1] Italic numerals in parentheses refer to Literature Cited, p. 69.
[2] By JOHN VAIKSNORAS, climatologist for Tennessee, National Weather Service, U.S. Dept. of Commerce.

tirely representative of conditions throughout the county. Local topographic features appear to have only a slight effect on major climatic elements, but the application of the Decatur data, shown in tables 1 and 2, to the surrounding terrain should allow for the influence of hills and ridges on rainfall, wind, snowfall, cold air drainage, and other phenomena. For example, the 53.6 inches of precipitation recorded at Decatur is about 5 inches less than that received at higher elevations. Annual rainfall at Decatur for the years 1931–56 ranged from 42.9 inches in 1953 to 66.7 inches in 1950.

The greatest amount of precipitation generally falls in winter and in spring. A secondary maximum of precipitation occurs late in spring and early in summer as the result of thunderstorm activity. Precipitation generally is lightest late in summer and early in fall. In all seasons there are periods of dry weather and periods in which rainfall is plentiful. Periods of excessive precipitation also occur in all seasons.

A statistical study of heavy precipitation indicates that quantities at least as great as those shown in the following tabulation occur at the stated frequency:

Frequency in 100 years	Inches per period of—		
	1 hour	*6 hours*	*12 hours*
1	3. 2	5. 0	6. 0
4	2. 6	4. 2	4. 8
20	2. 0	3. 3	3. 8
90	1. 2	2. 2	2. 7

TABLE 1.—*Temperature and precipitation at Decatur, Meigs County, Tenn.*

[Period of record: 1931–56. Station elevation 875 feet]

Month	Temperature				Precipitation				
	Average daily maximum	Average daily minimum	Two years in 10 will have at least 4 days with—		Average total	One year in 10 will have—		Number of days with snow cover	Average depth of snow cover
			Maximum temperature equal to or higher than—	Minimum temperature equal to or lower than—		Less than—	More than—		
	° *F.*	° *F.*	° *F.*	° *F.*	*Inches*	*Inches*	*Inches*		*Inches*
January	51	31	63	19	5. 8	2. 9	10. 4	21	3. 2
February	54	31	64	20	5. 4	3. 5	7. 6	19	1. 9
March	63	37	73	25	5. 8	4. 1	7. 4	10	1. 1
April	71	45	81	34	4. 4	3. 2	5. 4	(1)	(2)
May	80	54	88	45	4. 0	2. 6	6. 1	0	0
June	87	62	93	54	3. 8	2. 1	5. 6	0	0
July	89	66	94	61	4. 8	2. 3	7. 5	0	0
August	88	65	93	59	4. 8	2. 4	7. 0	0	0
September	84	58	91	49	2. 8	1. 1	4. 7	0	0
October	74	46	82	36	3. 0	1. 0	4. 2	0	0
November	60	35	71	24	3. 7	1. 9	4. 8	2	1. 4
December	51	30	60	19	5. 3	3. 0	8. 0	19	1. 8
Year	71	47	[3] 99	[4] 6	53. 6	30. 1	78. 7	71	2. 1

[1] Less than one-half day.
[2] Trace.
[3] Average annual maximum.
[4] Average annual minimum.

TABLE 2.—*Probability of given temperatures and colder after specified dates in spring and before specified dates in fall*

[For Decatur, Meigs County, Tenn.]

Probability	Dates for given probability and temperature				
	16° F. or lower	20° F. or lower	24° F. or lower	28° F. or lower	32° F. or lower
Spring:					
1 year in 10 later than	March 15	March 24	April 8	April 19	April 30
2 years in 10 later than	March 5	March 14	March 29	April 11	April 22
5 years in 10 later than	February 22	March 3	March 19	April 3	April 14
Fall:					
1 year in 10 earlier than	November 21	November 14	November 3	October 23	October 11
2 years in 10 earlier than	November 29	November 20	November 9	October 28	October 17
5 years in 10 earlier than	December 8	November 27	November 16	November 4	October 24

Temperature.—Average temperature decreases slightly from south to north. It is about 2 degrees higher in the southern part of the county than in the extreme northern part. The average annual temperature at Decatur is 59° F., but temperatures ranged from a high of 108° to a low of −19° during the period 1931 to 1956. Temperatures exceed 90° on about 55 days each year, and they fall below 32° on about 75 days each year. During an average winter the soil freezes to a depth of about 4 inches.

Long periods of very cold or very hot weather are unusual. Occasional periods of mild temperatures occur almost every winter, and occasional periods of cool, dry weather break up stretches of hot and humid weather in summer. The greatest change in the average daily maximum and minimum temperatures occurs during October and November and again in February and March, when cold air moves southward across the State.

The average dates of the last occurrence in spring and the first occurrence in fall of freezing temperatures at Decatur are April 14 and October 24, respectively. This gives an average growing season of 191 days. Elsewhere in the State, average days of freezing temperatures differ from those in the immediate area of Decatur by about a week in both the cooler northeast and milder west.

Severe storms.—Severe storms are relatively infrequent in Meigs County. Only two tornadoes have been reported during the period 1916 to 1968. The area is too far inland to experience damage from tropical storms. Hailstorms at a given locality occur about one or two times a year. Thunderstorms occur on about 56 days per year. Minor windstorms, often associated with thunderstorms, cause scattered local damage in the county a few times each year. Heavy snowstorms are infrequent, and snow seldom remains on the ground for more than a few days in winter.

Humidity, wind, and clouds.—Based on data from weather stations in surrounding counties, the average annual humidity in Meigs County is estimated to be approximately 70 percent. The relative humidity throughout the day usually varies inversely with the temperature and is, therefore, highest in early morning and lowest in early afternoon. There is also an annual variation in relative humidity; the average daily variation is highest in winter and lowest in spring.

The prevailing wind direction for each month of the year is from the south, and the average windspeed is about 7 miles per hour. The wind direction changes frequently. The average monthly windspeed ranges from about 5 miles per hour in August to about 8 miles per hour in February through April. Windspeeds are 3 miles per hour or less about 14 percent of the time, 4 to 12 miles per hour 60 percent of the time, 13 to 24 miles per hour 25 percent of the time, and 25 miles per hour or higher about 1 percent of the time. Winds are usually lightest during early morning hours and strongest in the early afternoon.

Clouds cover less than 0.6 of the sky on the average between sunrise and sunset. In a year cloud cover ranges from about 0.7 in January to about 0.5 in October. As a result sunshine is abundant, especially during the growing season when it averages slightly over 60 percent of the total amount possible.

How This Survey Was Made

Soil scientists made this survey to learn what kinds of soil are in Meigs County, where they are located, and how they can be used. The soil scientists went into the county knowing they likely would find many soils they had already seen and perhaps some they had not. They observed the steepness, length, and shape of slopes, the size and speed of streams, the kinds of native plants or crops, the kinds of rock, and many facts about the soils. They dug many holes to expose soil profiles. A profile is the sequence of natural layers, or horizons, in a soil; it extends from the surface down into the parent material that has not been changed much by leaching or by the action of plant roots.

The soil scientists made comparisons among the profiles they studied, and they compared these profiles with those in counties nearby and in places more distant. They classified and named the soils according to nationwide, uniform procedures. The *soil series* and the *soil phase* are the categories of soil classification most used in a local survey (*6*).

Soils that have profiles almost alike make up a soil series. Except for different texture in the surface layer, all the soils of one series have major horizons that are similar in thickness, arrangement, and other important characteristics. Each soil series is named for a town or other geographic feature near the place where a soil of that series was first observed and mapped. Decatur and Newark, for example, are the names of two soil series. All the soils in the United States having the same series name are essentially alike in those characteristics that affect their behavior in the undisturbed landscape.

Soils of one series can differ in texture of the surface soil and in slope, stoniness, or some other characteristic that affects use of the soils by man. On the basis of such differences, a soil series is divided into phases. The name of a soil phase indicates a feature that affects management. For example, Colbert silt loam, 3 to 12 percent slopes, is one of several phases within the Colbert series.

After a guide for classifying and naming the soils had been worked out, the soil scientists drew the boundaries of the individual soils on aerial photographs. These photographs show woodlands, buildings, field borders, trees, and other details that help in drawing boundaries accurately. The soil map in the back of this publication was prepared from the aerial photographs.

The areas shown on a soil map are called mapping units. On most maps detailed enough to be useful in planning the management of farms and fields, a mapping unit is nearly equivalent to a soil phase. It is not exactly equivalent, because it is not practical to show on such a map all the small, scattered bits of soil of some other kind that have been seen within an area that is dominantly of a recognized soil phase.

Some mapping units are made up of soils of different series, or of different phases within one series. A soil complex is one such kind of mapping unit shown on the soil map of Meigs County.

A soil complex consists of areas of two or more soils, so intermingled or so small in size that they cannot be shown separately on the soil map. Each area of a complex

contains some of each of the two or more dominant soils, and the pattern and relative proportions are about the same in all areas. The name of a soil complex consists of the names of the dominant soils, joined by a hyphen. Talbott-Rock outcrop complex, 5 to 20 percent slopes, is an example.

In most areas surveyed there are places where the soil material is so rocky, so shallow, or so severely eroded that it cannot be classified by soil series. These places are shown on the soil map and are described in the survey, but they are called land types and are given descriptive names. Gullied land is a land type in Meigs County.

While a soil survey is in progress, samples of soils are taken, as needed, for laboratory measurements and for engineering tests. Laboratory data from the same kinds of soil in other places are assembled. Data on yields of crops under defined practices are assembled from farm records and from field or plot experiments on the same kinds of soil. Yields under defined management are estimated for all the soils.

But only part of a soil survey is done when the soils have been named, described, and delineated on the map, and the laboratory data and yield data have been assembled. The mass of detailed information then needs to be organized in such a way as to be readily useful to different groups of users, among them farmers, managers of woodland, and engineers.

On the basis of yield and practice tables and other data, the soil scientists set up trial groups. They test these groups by further study and by consultation with farmers, agronomists, engineers, and others, then adjust the groups according to the results of their studies and consultation. Thus, the groups that are finally evolved reflect up-to-date knowledge of the soils and their behavior under present methods of use and management.

General Soil Map

The general soil map at the back of this survey shows, in color, the soil associations in Meigs County. A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in one association may occur in another, but in a different pattern.

A map showing soil associations is useful to people who want a general idea of the soils in a county, who want to compare different parts of a county, or who want to know the location of large tracts that are suitable for a certain kind of land use. Such a map is a useful general guide in managing a watershed, a wooded tract, or a wildlife area, or in planning engineering works, recreational facilities, and community developments. It is not a suitable map for planning the management of a farm or field, or for selecting the exact location of a road, building, or similar structure, because the soils in any one association ordinarily differ in slope, depth, stoniness, drainage, and other characteristics that affect their management.

The eight soil associations in Meigs County are discussed in the following pages.

1. Fullerton-Bodine-Ennis association

Undulating to steep, cherty soils that have a friable or firm subsoil and are deep to limestone bedrock; on hills and ridges

This association consists of soils on high, rounded hills and on long, narrow ridges that are dissected by numerous crooked drainageways (fig. 2). The drainageways, or hollows, are mainly narrow and V-shaped at the head, but widen to as much as 100 yards as they approach large streams. Some of the hills have sharp crests only a few feet wide, while others have broad, rounded tops about 200 feet wide. The hills generally have fairly long side slopes of 12 to 30 percent. This association makes up about 40 percent of the county.

Practically all of the soils of this association formed in material weathered from cherty dolomitic limestone. These soils are mostly well drained and deep. Bedrock is generally at a depth of more than 8 feet. Many angular fragments of chert are on the surface and throughout the soils. These soils are strongly acid, and have low natural fertility.

This association is about 50 percent Fullerton soils, 19 percent Bodine soils, and 2 percent Ennis soils. Much of the remaining 29 percent is made up of small tracts of Minvale, Tarklin, and Lobelville soils.

Fullerton soils are rolling to steep on hills. The surface layer is brown cherty silt loam, and the subsoil is red cherty clay.

Bodine soils are steep, and they are at the highest elevations of the association. The surface layer is pale-brown cherty silt loam, and the subsoil is strong-brown cherty silt loam or cherty silty clay loam.

Ennis soils are well-drained soils on narrow strips of bottom land along streams. They have a silt loam texture throughout.

Minor soils in this association are mostly Minvale, Tarklin, and Lobelville soils. Minvale and Tarklin soils are in small areas on foot slopes, and Lobelville soils are on narrow strips of bottom land. Minvale soils are deep, well drained, and loamy; Tarklin soils are moderately well drained and have a fragipan; and Lobelville soils are moderately well drained.

About half of this association has been cleared. A few wooded tracts, especially in the southern part of the association, are as much as 1,000 acres in size. Trees in these tracts are mostly cutover hardwoods, but pines are intermingled with the hardwoods in many places.

The average farm in this association is about 125 acres in size. On foot slopes and hilltops, field crops and hay are grown, mostly in small fields. Cleared hillsides are used for pasture, but the quality of the pasture varies. The main crops grown are hay and pasture plants, but corn, small grains, and tobacco are grown on small acreages. Dairy farming and the raising of beef cattle are the main farm enterprises. A small amount of timber is harvested on some farms.

Farming in this association is limited mainly by the steepness of slopes and the low natural fertility of the soils. Some of the rolling to steep soils on hillsides are used for pasture, but large amounts of lime and fertilizer are needed to make the pastures productive. Most of the

Figure 2.—**Area of Fullerton, Bodine, and Ennis soils of association 1. Fullerton and Bodine soils, used for pasture, are on the hills in the background, and Ennis soils, used to grow hay, are in the foreground. White areas on the hillsides are fragments of chert.**

soils suitable for cultivation are small areas on foot slopes, narrow strips of bottom land, and hilltops.

Steep slopes are the main limitation to use of the soils for engineering purposes. Deep cuts and fills are required where a highway is to be constructed. Where slopes are not too steep, most of the soils are suitable as sites for residences that require septic tanks.

The many large wooded areas provide food and cover for wildlife, and the association is well suited to hunting areas, parks, and other recreational developments.

The association contains few permanent streams. Livestock obtain much of their water from ponds. To prevent excessive seepage, compaction or chemical treatment of the soils is commonly required for the pond reservoir.

2. *Litz-Sequoia-Lindside association*

Undulating to hilly soils that have a firm, clayey subsoil or a friable, loamy subsoil and are shallow to deep to shale rock; in valleys

This association consists mainly of soils in a long narrow valley that crosses the county in a southwest-northeast direction. Within this valley are low-lying hills that have short, moderately steep sides and broad, gently rolling tops. Drainageways meander through the valley, and strips of nearly level bottom land along these drainageways are generally less than 200 feet wide (fig. 3). A few discontinuous areas are in the meanders of the Tennessee River. This association makes up about 10 percent of the county.

The soils of this association formed in material weathered from acid shale. The depth to soft shale ranges from a few inches on the steepest slopes to about 2 to 4 feet on smooth hilltops and foot slopes. The upper part of the shale rock is soft and easily removed by digging tools. Almost all areas on uplands are well drained, but those along drainageways and on foot slopes are well drained to poorly drained.

This association is about 50 percent Litz soils, 12 percent Sequoia soils, and 10 percent Lindside soils. The remaining 28 percent is made up of Chagrin, Newark, Shouns, and Tarklin soils.

Litz soils occupy most of the side slopes. They are well drained, have large amounts of shale fragments in the subsoil, and are about 20 to 36 inches thick over soft shale rock. The surface layer is silt loam, and the subsoil is silty clay loam.

Sequoia soils are in small, gently rolling areas on hilltops. They are well drained and have a surface layer of brown silt loam and a subsoil of yellowish-red silty clay. Soft bedrock is at a depth of about 2 to 4 feet.

The Lindside soils are on narrow strips in bottoms. They are moderately well drained, brown, and loamy.

Minor soils in this association are comparatively large acreages of well-drained Chagrin soils and somewhat

Figure 3.—Area of association 2 in a valley between high ridges. Litz soils, used for pasture, are on slopes below the wooded ridge. Gently sloping Sequoia soils are in the left foreground, and Lindside soils are along the narrow drainageway in the foreground. Shouns soils are in the small rectangular field containing a row of fruit trees, and Fullerton and Bodine soils are on the wooded ridge in the background.

poorly drained Newark soils in bottoms and small areas of Tarklin and Shouns soils on foot slopes. Tarklin soils have a fragipan. Shouns soils are loamy and well drained.

About three-fourths of the association has been cleared, but a large part of the more sloping acreage has been abandoned and is now mainly overgrown by Virginia pine. Some of the more eroded areas have been planted to pines. Uncleared areas are in mixed pines and hardwoods. Crops are grown in small areas on foot slopes, in narrow bottoms, and on smooth hilltops. Large acreages on uplands and in bottoms are used for pasture.

The average farm in this association is about 100 acres in size. This association is used mostly for pasture and small fields of hay, corn, and tobacco. Many of the farmers supplement their income by part-time or full-time employment off the farm.

Farming in this association is limited mainly by soil depth and low natural fertility. Soils suitable for cultivation are in small fields adjacent to soils suited only to pasture and woodland. Most of the acreage is moderately well suited to pasture if well limed and fertilized.

Water moves very slowly through the underlying shale rock. For this reason, the use of this association for septic tank filter fields is severely limited. The slow permeability of the underlying shale favors the development of pond and lake sites, however, because the risk of excessive seepage is very low. Highway construction is mainly limited by slope and the moderate amount of cutting and filling required in places.

3. *Lehew-Montevallo-Shouns association*

Rolling to steep, shallow to moderately deep soils that have a friable, loamy subsoil, on high, steep sandstone and shale ridges; and deep soils that have a friable, loamy subsoil, on foot slopes

This association consists of soils on high winding ridges that have sharp crests and long, very steep side slopes (fig. 4). A network of V-shaped hollows or drain-

Figure 4.—**Typical area of association 3. Steep Lehew and Montevallo soils are on the wooded ridge in the background. Shouns soils, used for pasture, are at the base of the ridge.**

ageways has cut deeply into the faces of the ridges. Slopes generally are steeper than 30 percent. This association makes up about 18 percent of the county.

The soils of this association formed in material weathered from multicolored interbedded sandstone and shale. The soils are well drained or excessively drained and droughty. Some soils have many shale and sandstone fragments throughout. They are very strongly acid, very low in fertility, and average about 2 feet thick over soft bedrock.

This association is about 50 percent Lehew soils, 10 percent Montevallo soils, and 10 percent Shouns soils. The remaining 30 percent is made up of tracts of Teas, Chagrin, Lindside, and Newark soils.

Lehew soils are multicolored loamy soils. They have many sandstone fragments throughout, and are about 2 feet thick over hard bedrock.

Montevallo soils have a large amount of shale fragments throughout the soil, and they are about 1 to 3 feet thick over soft shale.

Shouns soils are deep, loamy, and well-drained soils on foot slopes.

This association includes a large acreage of Teas soils on the lower lying hills below the high ridges. These soils have a subsoil of reddish-brown shaly silt loam. Chagrin, Lindside, and Newark soils are on the few narrow strips of bottom land that occur in this association.

Practically all of this association is in woodlands consisting of pines and hardwoods. The few small patches that have been cleared have been largely abandoned and are now idle or have been reforested by Virginia pine.

Pines and hardwoods make fair growth in this association. Only a small part of the association is suited to field crops and pasture.

Soils of this association generally have severe limitations for practically all engineering uses because of the steep slopes and the shallow depth to bedrock.

4. Talbott-Colbert-Etowah association

Undulating to hilly soils that have a plastic, clayey or friable, loamy subsoil and are moderately deep and deep to limestone rock; on uplands and terraces

This association consists of rolling soils on broad, rounded hills separated in places by areas of gently sloping soils on large benches and upland flats (fig. 5). All of this association is underlain by limestone, and in places there are numerous depressions and sinks. Slopes mostly range from 2 to 15 percent. This association makes up about 22 percent of the county.

Most of the soils formed in material weathered from limestone. In most places limestone is at a depth of 2 to 4 feet. However, soil thickness ranges from zero, where rock is at the surface, to about 6 or 7 feet. The thickest soils are on benches and broad upland flats, where old river sediments (old alluvium) have increased the amount of soil material.

This association is about 30 percent Talbott soils, 19 percent Colbert soils, and 15 percent Etowah soils. The

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Figure 5.—**Typical area of association 4. The areas in pasture are mainly Talbott and Colbert soils, but a small area of Etowah soils is in the left foreground. The wooded tract of second-growth cedars and pines is growing on a severely eroded Talbott soil.**

remaining 36 percent is made up of Capshaw, Emory, Lindside, and Newark soils.

Talbott soils have a subsoil of yellowish-red plastic clay. These soils are about 2 to 5 feet thick over limestone rock.

Colbert soils have a subsoil of yellowish-brown, very plastic clay. These soils are about 2 to 3 feet thick over limestone bedrock.

Etowah soils are highly productive soils that have a dark-brown surface layer and a yellowish-red loamy subsoil. These soils are mostly on benches and broad smooth uplands. They are 5 to 7 feet thick over bedrock.

This association includes a large acreage of Capshaw soils. These soils are moderately well drained and have a yellowish-brown clayey subsoil in the lower part. They are in small gently sloping areas next to Etowah and Colbert soils. Emory soils are well drained and have a dark-brown surface layer. They are in small depressions and in narrow strips along some of the intermittent drainageways. The moderately well drained Lindside soils and the somewhat poorly drained Newark soils are in narrow strips of bottom land along streams. Areas in which limestone rock occurs at the surface are scattered throughout the association.

Most of the association has been cleared. Wooded tracts, dominantly cedar, are largely on rocky areas. Small amounts of timber are harvested to be used as fenceposts and lumber.

The average farm in this association is about 100 acres in size. Raising beef cattle is the main farm enterprise. The soils in this association are used mostly for pasture, hay, tobacco, corn, and small grains. A large part of the association is used for pasture and hay crops. Tobacco is the main cash crop, and most farms plant it in small allotments. Most farms grow corn and small grains on small acreages. This association is thicky populated. Farms are medium and small in size, and residences along highways range from lot size up to 2 or 3 acres. Many farmers and others are employed in nearby towns and factories.

Farming in this association is limited by the clayey plastic subsoil of some of the soils, by rock outcrops, and by slope. Most of the soils are suited to pasture. Some soils suitable for frequent cultivation occur in small scattered tracts. Emory soils on benches and broad smooth upland areas are especially productive.

Limitations to use of the soils for engineering purposes range from slight to severe. Road construction requires cutting in limestone rock in many places. Limitations for septic tank filter fields range from severe on the plastic clay soils to slight on the deep loamy soils.

5. *Decatur-Waynesboro-Fullerton association*

Rolling and hilly soils that have a firm, clayey or friable, loamy subsoil and are deep to limestone rock; on uplands and terraces

This association is in small tracts adjacent to or near the Tennessee River. The soils are rolling to hilly, and the topography is highly irregular in places because of depressions and limestone sinks. Slopes mostly range from 3 to 15 percent. This association makes up about 4 percent of the county.

The soils in this association formed in old alluvium and in residuum from limestone. Depth to limestone rock is more than 6 feet. These soils are well drained, and have a dark-red to red subsoil.

The association is about 30 percent Decatur soils, 30 percent Waynesboro soils, and 18 percent Fullerton soils. Etowah, Capshaw, Emory, and Wolftever soils make up most of the remaining 22 percent.

Decatur soils have a dark-red clayey subsoil. Waynesboro soils are loamy in the upper part of the subsoil and clayey in the lower part. Both the Decatur and Waynesboro soils formed in old alluvium that contains a few rounded cobblestones or pebbles. Fullerton soils are well-drained soils that have a red clayey subsoil. Angular chert fragments are on the surface and throughout the soil profile of Fullerton soils.

Etowah soils and Capshaw soils are in small areas on benches and foot slopes. Etowah soils are well drained, reddish, and loamy. Capshaw soils are moderately well drained soils and yellowish in color. Emory soils are loamy soils that occupy small areas mainly in depressions and along drainageways. Wolftever soils are moderately well drained and nearly level soils on low terraces.

All of the acreage is cleared except for small scattered farm woodlots. This association is used mostly for pasture and hay, but corn, tobacco, and small grains are also grown on small acreages. Tobacco is the main cash crop. However, the main farm enterprise is raising beef cattle.

Most of the soils in this association are suited to pasture and hay. Row crops can be grown, but slopes are too steep in most places for frequent cultivation. Soils that can be cultivated every year or used in short cropping systems are mostly in tracts of less than 10 acres in size.

Slope is the main limitation to use of the soils for highway construction, residential building, and most kinds of recreation. Nearly all of the soils have good drainage and favorable permeability for these uses. The permeable subsoils limit the suitability of these soils for pond reservoirs. Chemical treatment is required in many instances to prevent excessive seepage.

6. *Decatur-Waynesboro-Talbott association*

Undulating to hilly soils that have a firm and clayey, friable and loamy, or plastic and clayey subsoil and are deep and moderately deep to limestone rock; on uplands and terraces

This association is in an area of low rolling hills (fig. 6). It consists of gently sloping soils on the broad, rounded tops of hills and moderately steep soils on short side slopes. In a few areas, limestone sinks and depressions contain up to 2 to 3 acres of nearly level bottom land. Slopes range from 2 to 20 percent. This association makes up about 2 percent of the county.

Most of the soils in this association formed in very old alluvium. A few soils formed in material weathered from the clayey limestone that underlies all of the association. These are mostly deep, well-drained soils that have a dark-red to yellowish-red clayey subsoil.

This association is about 30 percent Decatur soils, 25 percent Waynesboro soils, and 15 percent Talbott soils. The remaining 30 percent is made up of minor soils.

Decatur soils have a surface layer of dark reddish-brown silt loam and a dark-red clayey subsoil.

Waynesboro soils have a surface layer of brown loam and a subsoil of red and yellowish-red clay loam. The substratum, at a depth of about 30 inches, is dark-red clay.

Talbott soils are 2 to 5 feet thick over bedrock. These soils have a surface layer of dark yellowish-brown silt loam and a subsoil of yellowish-red plastic clay.

Small areas of gently sloping, well-drained, loamy Etowah soils are on benches and on some of the broad tops of hills. Well-drained, dark-brown, loamy Emory soils are in depressions and narrow strips along drainageways.

Most of the acreage of this association has been cleared. Pasture and hay are the main crops. Small grains, corn, and tobacco are grown in small acreages. Raising beef cattle is the main farm enterprise.

The soils throughout practically all of this association are suited to pasture and hay. Only a small acreage of the association is suited to frequent cultivation. Soils suitable for a short cropping system generally are in tracts that range from 2 to 10 acres in size.

Hilly terrain, in places, and some soils that have a clayey subsoil are the main limitations to most engineering uses. Most of the soils have permeable subsoils, consequently, pond reservoirs are likely to seep unless chemically treated or compacted.

7. *Holston-Waynesboro-Sequoia association*

Undulating to hilly soils that have a friable, loamy subsoil or a firm, clayey subsoil and are deep and moderately deep to shale rock; on uplands and terraces

This association is in an area of low rolling hills that are cut by shallow meandering drainageways. It consists of gently sloping soils on the broad, rounded tops of hills and of moderately steep soils on very short side slopes. Slopes range from 2 to 15 percent. This association makes up about 2 percent of the county.

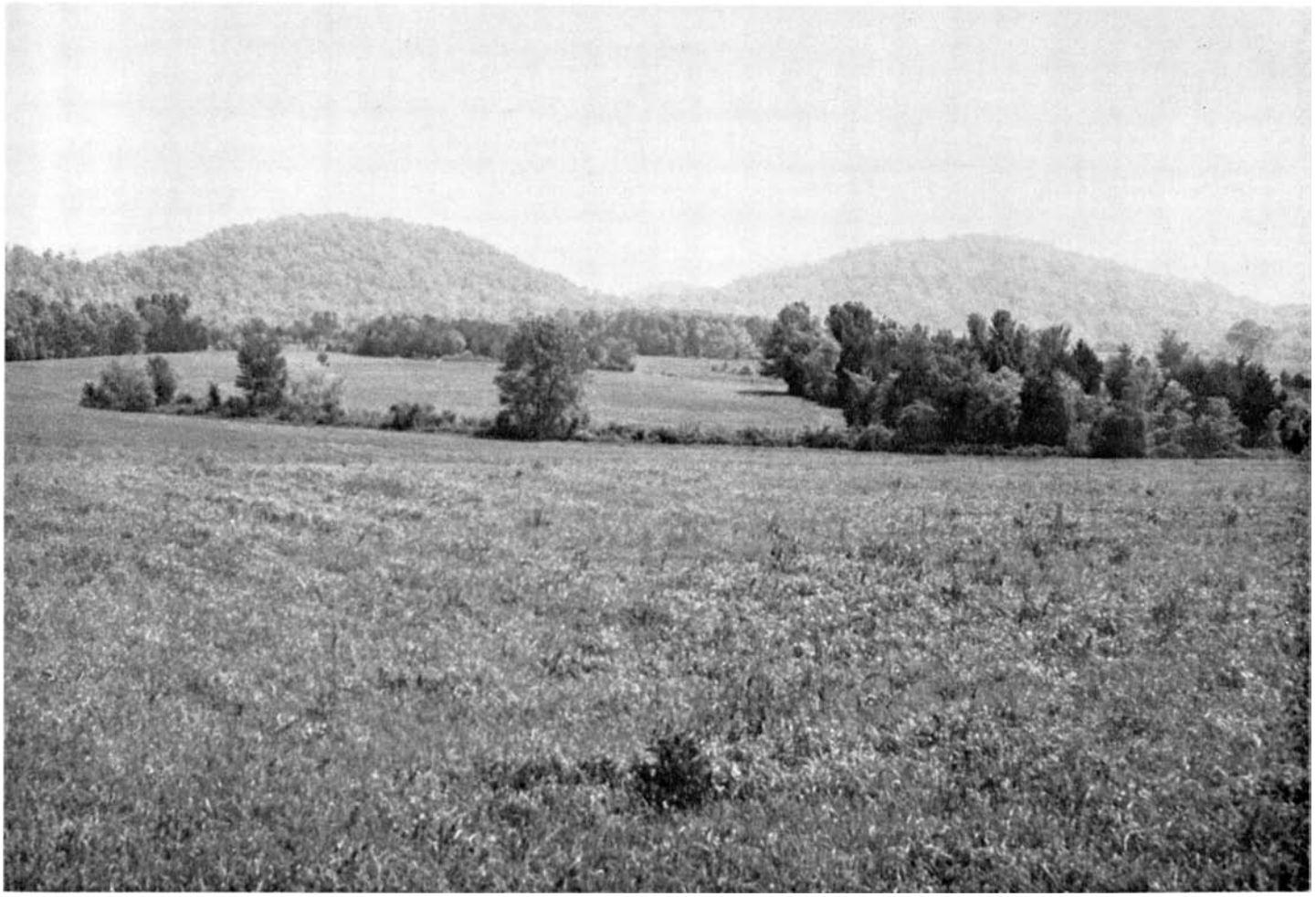

Figure 6.—**Decatur, Waynesboro, and Talbott soils of association 6. Decatur and Waynesboro soils occupy most of the fields used for pasture and hay. Talbott soils are in the wooded area at the right, and Lehew soils are on the ridges in the background.**

All of this association is underlain by acid shale rock. On about half of the association there is a layer of old alluvium that ranges from 4 to 8 feet in thickness and that overlies the acid shale rock. On the rest of the association the depth to shale rock generally is less than 4 feet. In places the shale is exposed at the surface.

The soils that formed in the old alluvium are deep and well drained, yellowish and reddish in color, and loamy and slightly clayey in texture. The soils that formed in material weathered from shale occupy nearly half of the acreage. These soils have a clayey to shaly subsoil. They have moderately slow permeability, chiefly because water moves very slowly into the shale rock.

This association is about 25 percent Holston soils, 25 percent Waynesboro soils, and 15 percent Sequoia soils. The remaining 35 percent is made up of minor soils.

Holston soils are deep, well-drained, yellowish loamy soils that formed in old alluvium.

Waynesboro soils are deep and well drained. They have a subsoil that is dark red and clayey in the lower part.

Sequoia soils have a yellowish-red clayey subsoil. They range from 2 to 5 feet thick over soft shale rock.

A fairly large acreage of the shallow shaly Litz soils are on some of the short steep slopes. Lindside soils are in narrow strips along drainageways.

About half of this association is in forest, some of which is second-growth pines. Pasture and hay are the main crops and there are small acreages of corn, tobacco, and small grains. Raising beef cattle is the most important farm enterprise. Tobacco is the main cash crop. Many of the farmers supplement their incomes by part-time or full-time employment off the farm. The average farm in this association is about 100 acres in size.

About three-fourths of the acreage is well suited to pasture, and the rest is moderately well suited. About half of the acreage is suited to cultivation in medium to long cropping systems. All of the soils have low natural fertility and are strongly acid; consequently, much lime and fertilizer is required.

Hilly terrain in places is the main limitation to highway construction. Generally features are favorable. The upper few feet of the shale rock is soft and easy to remove. The soils that have shale rock within 2 to 4 feet of the surface have severe limitations for septic tank drainage fields, because the shale rock is very slowly permeable. Practically all of the soils are good pond sites.

8. *Wolftever-Egam-Etowah association*

Nearly level and undulating soils that have a firm or friable, loamy subsoil and are deep to limestone or shale rock; on low terraces along the Tennessee River

This association consists of soils on a few long narrow strips of low terraces and first bottoms along the Tennessee River. These strips are separated by shallow intermittent drainageways that run parallel to the river. This association makes up nearly 2 percent of the county.

All of the soils in this association formed in sediment deposited by the river. Most of the soils are moderately well drained and have a silty clay loam subsoil.

This association is about 40 percent Wolftever soils, 10 percent Egam soils, and 10 percent Etowah soils. The remaining 40 percent mostly is made up of Beason, Humphreys, Lindside, and Staser soils.

Wolftever soils are nearly level soils on long strips of low terraces. They are moderately well drained and have a subsoil of brown silty clay loam.

Egam soils are moderately well drained and have a subsoil of dark-brown silty clay. These soils are on first bottoms.

Etowah soils are well drained and have a subsoil of yellowish-red silty clay loam. These soils are on high terraces above the Wolftever soils.

Staser soils are dark-brown loamy soils on a few long narrow strips next to the river. Lindside soils are mottled brown and gray loamy soils along narrow drainageways. Humphreys soils are well-drained loamy soils on low stream terraces. Beason soils are poorly drained, dominantly gray soils in the lowest places of the association.

All of the acreage is cleared, and nearly half of it is used for pasture and hay. The main field crops are soybeans, vegetables, and corn. Few farms are entirely within this association. Most of them include some soils of the adjoining uplands. A large acreage is under the administration of the Tennessee Valley Authority and the U.S. Bureau of Sport Fisheries and Wildlife. Hiwassee Island is a waterfowl refuge.

Soils in this association are suited to many different crops. In many places the soils are nearly level and can be cultivated every year. The main limitations to use of the soils for farming and other purposes are wetness in the lowest areas and some flooding along the lateral streams that flow into the Tennessee River.

Descriptions of the Soils

In this section the soils of Meigs County are described in detail. The procedure is to describe first the soil series and then the mapping units, or kinds of soil, in that series. Thus, to get full information on any one mapping unit, it is necessary to read both the description of that unit and the description of the soil series to which the unit belongs.

Each soil series description contains a short narrative description of a profile considered representative of the series, and a much more detailed description of the same profile that scientists, engineers, and others can use in making highly technical interpretations. The colors described are for moist soil, unless otherwise noted.

Following the name of each mapping unit, there is a symbol in parentheses. This symbol identifies the mapping unit on the detailed soil map. Listed at the end of each description of a mapping unit are the capability unit and the woodland suitability group in which the mapping unit has been placed.

Some of the terms used in the soil descriptions are defined in the Glossary, and some are defined in the section "How This Survey Was Made." The approximate acreage and proportionate extent of each soil mapped are shown in table 3. At the back of this soil survey is the "Guide to Mapping Units," which lists the mapping units in the county and gives the capability unit and woodland suitability group for each and the page where each of these groups is described.

Beason Series

The Beason series consists of somewhat poorly drained, level or nearly level soils on low stream terraces, in small areas around the heads of drainageways, and on benches below the sides of hills. Slopes range from 0 to 2 percent.

In a representative profile the surface layer is dark grayish-brown silt loam about 9 inches thick. The subsoil, to a depth of 22 inches, is yellowish-brown firm silty clay loam and clay that has gray mottles. The lower part, to a depth of 60 inches, is mottled, gray, very firm clay.

Available water capacity is moderate, and permeability is moderately slow. The Beason soils are waterlogged for long periods in winter and spring.

These soils are used mostly for pasture, but some row crops are grown.

Representative profile of Beason silt loam:

Ap—0 to 9 inches, dark grayish-brown (10YR 4/2) silt loam; moderate, granular structure; friable; many fine roots; strongly acid; clear, smooth boundary.

B21t—9 to 15 inches, yellowish-brown (10YR 5/4) silty clay loam; few, fine and medium, distinct, light brownish-gray (10YR 6/2) mottles; moderate, medium, angular blocky structure; firm; few fine roots; discontinuous clay films; strongly acid; clear, smooth boundary.

B22t—15 to 22 inches, yellowish-brown (10YR 5/4) clay; many, medium, distinct, light-gray (10YR 7/2) mottles, and few, medium, distinct, strong-brown (7.5YR 5/6) mottles; moderate, medium, angular blocky structure; firm; few, fine, dark concretions; discontinuous clay films; very strongly acid; gradual, wavy boundary.

B23tg—22 to 47 inches, gray (10YR 6/1) clay; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, medium, angular blocky structure; very firm; few, fine, dark concretions; discontinuous clay films; very strongly acid; gradual, wavy boundary.

B3g—47 to 60 inches, gray (10YR 6/1) clay; common, medium, distinct, yellowish-brown (10YR 5/6) mottles; weak, coarse, angular blocky structure; very firm; common, fine, dark concretions; patchy clay films; very strongly acid.

The Ap horizon ranges from 5 to 9 inches in thickness. The B23tg and B3g horizons range from yellowish brown or olive brown to gray or light gray in color, and have common to many, grayish or yellowish-brown mottles. The entire profile ranges from strongly acid to very strongly acid, except the surface layer is less acid where lime has been applied.

Beason silt loam (Be).—This is the only Beason soil mapped in the county. This soil is level or nearly level, and is in small areas on low terraces, around the heads of drains, and on narrow benches below the sides of hills. It is somewhat poorly drained.

TABLE 3.—*Approximate acreage and proportionate extent of the soils*

Soils	Area	Extent	Soils	Area	Extent
	Acres	*Percent*		*Acres*	*Percent*
Beason silt loam	1,020	0.8	Lindside silt loam	6,385	5.4
Bodine cherty silt loam, 5 to 20 percent slopes	5,005	4.1	Litz silt loam, 5 to 20 percent slopes	4,265	3.6
Bodine cherty silt loam, 20 to 40 percent slopes	4,435	3.6	Litz silt loam, 20 to 30 percent slopes	925	.8
Capshaw silt loam, 2 to 5 percent slopes	1,695	1.4	Litz shaly silty clay loam, 5 to 20 percent slopes, severely eroded	2,175	1.8
Capshaw silt loam, 5 to 12 percent slopes, eroded	590	.5	Lobelville cherty silt loam	1,300	1.1
Chagrin silt loam	390	.3	Minvale silt loam, 5 to 12 percent slopes	775	.6
Colbert silt loam, 3 to 12 percent slopes	3,730	3.0	Minvale cherty silt loam, 5 to 12 percent slopes	1,350	1.1
Colbert silty clay, 3 to 12 percent slopes, severely eroded	1,280	1.1	Minvale cherty silt loam, 12 to 20 percent slopes, eroded	990	.8
Conasauga silt loam, 3 to 12 percent slopes	415	.3	Montevallo shaly silt loam, 5 to 20 percent slopes	1,730	1.4
Decatur silt loam, 2 to 5 percent slopes, eroded	355	.3	Montevallo shaly silt loam, 20 to 30 percent slopes	410	.3
Decatur silt loam, 5 to 12 percent slopes, eroded	1,955	1.5	Newark silt loam	2,095	1.7
Decatur silt loam, 12 to 25 percent slopes, eroded	945	.8	Rock land	920	.8
Decatur gravelly silt loam, 5 to 12 percent slopes, eroded	580	.5	Sequoia silt loam, 2 to 5 percent slopes, eroded	640	.5
Decatur gravelly silt loam, 12 to 20 percent slopes, eroded	575	.5	Sequoia silt loam, 5 to 12 percent slopes, eroded	1,020	.8
Decatur silty clay loam, 5 to 12 percent slopes, severely eroded	535	.4	Sequoia silty clay, 5 to 12 percent slopes, severely eroded	285	.2
Decatur silty clay loam, 12 to 20 percent slopes, severely eroded	645	.5	Shouns silt loam, 5 to 12 percent slopes	1,240	1.0
Decatur gravelly silty clay loam, 12 to 20 percent slopes, eroded	440	.3	Shouns silt loam, 12 to 20 percent slopes, eroded	320	.3
Dowellton silt loam	260	.2	Shouns silty clay loam, 10 to 20 percent slopes, severely eroded	385	.3
Dunning silty clay loam	375	.3	Staser fine sandy loam, coarse subsoil variant	725	.6
Egam silty clay loam	390	.3	Talbott silt loam, 2 to 5 percent slopes	585	.5
Emory silt loam	1,225	1.0	Talbott silt loam, 5 to 12 percent slopes, eroded	1,795	1.5
Ennis silt loam	325	.3	Talbott silt loam, 12 to 20 percent slopes, eroded	300	.3
Ennis cherty silt loam	1,050	.9	Talbott silty clay, 5 to 20 percent slopes, severely eroded	1,010	.8
Etowah silt loam, 2 to 5 percent slopes	2,185	1.8	Talbott-Rock outcrop complex, 5 to 20 percent slopes	5,235	4.3
Etowah silt loam, 5 to 12 percent slopes	2,040	1.7	Tarklin silt loam, 2 to 8 percent slopes	965	.7
Etowah gravelly silt loam, 2 to 5 percent slopes	255	.2	Tarklin cherty silt loam, 2 to 5 percent slopes	405	.3
Etowah gravelly silt loam, 5 to 12 percent slopes	655	.6	Tarklin cherty silt loam, 5 to 12 percent slopes	505	.4
Fullerton silt loam, 5 to 12 percent slopes	570	.5	Teas silt loam, 5 to 20 percent slopes	340	.3
Fullerton silt loam, 12 to 20 percent slopes	270	.2	Teas silt loam, 20 to 40 percent slopes	645	.5
Fullerton cherty silt loam, 5 to 12 percent slopes	4,930	4.0	Waynesboro loam, 5 to 12 percent slopes	1,120	.9
Fullerton cherty silt loam, 12 to 20 percent slopes	5,290	4.3	Waynesboro loam, 12 to 20 percent slopes	650	.5
Fullerton cherty silt loam, 20 to 30 percent slopes	9,275	7.6	Waynesboro gravelly loam, 5 to 12 percent slopes	685	.6
Fullerton cherty silt loam, 30 to 45 percent slopes	5,050	4.1	Waynesboro gravelly loam, 12 to 20 percent slopes	895	.7
Fullerton cherty silty clay loam, 12 to 20 percent slopes, severely eroded	695	.6	Waynesboro gravelly loam, 20 to 30 percent slopes	190	.2
Fullerton cherty silty clay loam, 20 to 30 percent slopes, severely eroded	620	.5	Waynesboro clay loam, 5 to 20 percent slopes, eroded	335	.3
Gullied land, clayey material	1,760	1.4	Waynesboro gravelly clay loam, 5 to 20 percent slopes, eroded	270	.2
Gullied land, Litz soil material	1,450	1.2	Whitwell loam, 0 to 5 percent slopes	440	.3
Holston loam, 2 to 5 percent slopes	240	.2	Wolftever silt loam, 1 to 5 percent slopes	1,035	.8
Holston loam, 5 to 12 percent slopes	685	.6	Wolftever silt loam, 5 to 12 percent slopes, eroded	345	.3
Holston gravelly loam, 5 to 12 percent slopes	290	.2	Other land (mine pits and dumps)	140	.2
Humphreys silt loam, 2 to 5 percent slopes	1,240	1.0			
Lehew channery loam, 5 to 20 percent slopes	1,080	.9	Total	122,240	100.0
Lehew channery loam, 20 to 60 percent slopes	9,620	7.8			

Included with this soil in mapping are a few small areas of a soil that has a fragipan.

This Beason soil is strongly acid or very strongly acid, except in the surface layer where lime has been applied. Permeability is moderately slow in the subsoil, and available water capacity is moderate. This soil is waterlogged for long periods in winter and spring, but it dries out in summer and fall.

This soil is too wet for crops such as alfalfa and tobacco. It is suited to most other commonly grown crops if excess surface water is removed from the low spots. Capability unit IIw–1; woodland group 3w8.

Bodine Series

The Bodine series consists of excessively drained cherty soils on high hills and ridges (fig. 7). Most slopes range from 5 to 40 percent.

Figure 7.—**A steep Bodine soil that has been recently cleared and seeded to pasture. The white patches are fragments of chert. An Ennis soil is along the drainageway in the foreground.**

In a representative profile the surface layer is pale-brown cherty silt loam about 12 inches thick. The upper 6 inches of the subsoil is light yellowish-brown, friable, cherty silt loam. Below this, to a depth of 60 inches, is strong-brown, friable, very cherty silt loam and very cherty silty clay loam.

Available water capacity is low, and permeability is rapid. The Bodine soils are low in natural fertility.

These soils are largely in cutover hardwood and pine forests.

Representative profile of Bodine cherty silt loam, 5 to 20 percent slopes:

A1—0 to 1 inch, dark grayish-brown (10YR 4/2) cherty silt loam; weak, fine, granular structure; very friable; 40 percent, by volume, angular chert fragments; many roots; very strongly acid; abrupt, smooth boundary.

A2—1 to 12 inches, pale-brown (10YR 6/3) cherty silt loam; moderate, medium, granular structure; friable; 40 percent, by volume, angular chert fragments up to 4 inches across; many roots; very strongly acid; clear, smooth boundary.

B1—12 to 18 inches, light yellowish-brown (10YR 6/4) cherty silt loam; moderate, fine and medium, subangular blocky structure; friable; 50 percent, by volume, chert fragments; many roots; very strongly acid; clear, smooth boundary.

B21t—18 to 32 inches, strong-brown (7.5YR 5/6) very cherty silt loam; moderate, medium, subangular blocky structure; friable; 60 percent chert fragments; common roots; thin patchy clay films on peds, on chert fragments, and in pores; very strongly acid; gradual, smooth boundary.

B22t—32 to 60 inches, strong-brown (7.5YR 5/8) very cherty silty clay loam; moderate, medium, subangular blocky structure; friable; 70 percent chert fragments; few roots; thin patchy clay films on peds, on chert fragments, and in pores; very strongly acid.

The A horizon ranges from 6 to 14 inches in thickness. The color of the A horizon is pale brown to yellowish brown in areas that have been cultivated. The B21t and B22t horizons are cherty silt loam or cherty silty clay loam, and are yellowish brown, strong brown, or reddish yellow in color. The amount of angular chert fragments ranges from about 40 to 75 percent, by volume, throughout the profile. Depth to limestone bedrock ranges from 10 to 30 feet.

Bodine cherty silt loam, 5 to 20 percent slopes (BoD).—This excessively drained cherty soil is on the tops of ridges and on short hillsides. It has the profile described as representative for the series. The amount of chert fragments in the soil generally is about 50 percent, by volume, but ranges from 40 to 75 percent.

Included with this soil in mapping are a few small areas that are severely eroded. Generally, a greater con-

centration of chert is on the surface in these eroded areas, than in uneroded areas.

This Bodine soil is poorly suited to cultivated crops, and better suited to permanent pasture, hay, and trees. Capability unit VIs–2; woodland group 4f3.

Bodine cherty silt loam, 20 to 40 percent slopes (BoE).—This soil is steep and cherty. It is on hills and ridges. The surface layer is pale-brown or yellowish-brown cherty silt loam about 6 to 12 inches thick. The subsoil, is several feet thick, and is yellowish-brown, strong-brown, or reddish-yellow cherty silt loam or cherty silty clay loam. Chert fragments are on the surface and throughout the profile and make up about 50 percent of the soil volume. These chert fragments range from a half inch to 5 inches in diameter.

Included with this soil in mapping are areas where beds of loose chert are within 18 inches of the surface.

This soil is very strongly acid, has low natural fertility, and has low available water capacity.

This Bodine soil is not suited to cultivated crops and is very poorly suited to pasture. It is better suited to trees and most of the area is in heavily cutover hardwoods (fig. 8). Capability unit VIIs–1; woodland group 3f8 for north and east exposures, and 4f3 for south and west exposures.

Capshaw Series

The Capshaw series consists of moderately well drained soils that formed in a thin layer of alluvium overlying a layer of clay that is derived from the limestone bedrock. Slopes range from 2 to 12 percent.

In a representative profile the surface layer is brown silt loam about 8 inches thick. The upper part of the subsoil is friable and firm, yellowish-brown and brownish-yellow silty clay loam about 18 inches thick. This layer has gray and brown mottles in the lower few inches. The lower part of the subsoil has gray and brown mottles, and consists of very firm, yellowish-brown clay about 24 inches thick. Limestone bedrock is at a depth of 50 inches.

Figure 8.—**Wooded area of Bodine cherty silt loam, 20 to 40 percent slopes, that has been severely cut over. The remaining hardwoods have been deadened, and the area has been planted to pines.**

The Capshaw soils have slow permeability and moderate available water capacity.

These soils are used for pasture, hay, and row crops.

Representative profile of Capshaw silt loam, 2 to 5 percent slopes:

Ap—0 to 8 inches, brown (10YR 4/3) silt loam; moderate, fine, granular structure; friable; medium acid; clear, smooth boundary.

B1t—8 to 12 inches, yellowish-brown (10YR 5/6) silty clay loam; strong, fine, subangular blocky structure; friable; few manganese concretions; thin, patchy clay films; strongly acid; clear, smooth boundary.

B21t—12 to 21 inches, brownish-yellow (10YR 6/6) silty clay loam; strong, fine, subangular blocky structure; firm; few, fine, black concretions; thin, continuous clay films; strongly acid; gradual, smooth boundary.

B22t—21 to 26 inches, brownish-yellow (10YR 6/6) silty clay loam; common, medium, distinct, strong-brown (7.5YR 5/6) and light brownish-gray (10YR 6/2) mottles; strong, fine, subangular blocky structure; firm; common, fine concretions; thin, continuous clay films; strongly acid; gradual, smooth boundary.

B23t—26 to 40 inches, yellowish-brown (10YR 5/6) clay; common, medium, distinct, light brownish-gray (10YR 6/2) and strong-brown (7.5YR 5/6) mottles; strong, coarse, subangular blocky structure; very firm; thick, continuous clay films; strongly acid; gradual, smooth boundary.

B3t—40 to 50 inches, yellowish-brown (10YR 5/6) clay; many, medium, distinct, strong-brown (7.5YR 5/6) and light brownish-gray (10YR 6/2) mottles; moderate, medium and coarse, subangular blocky structure; very firm; thick, continuous clay films; slightly acid.

R—50 inches +, limestone bedrock.

The A horizon ranges from 4 to 10 inches in thickness. Gray mottles are common at an average depth of 20 inches. The B horizon is mostly yellowish brown, strong brown, or brownish yellow. The B1 and B2 horizons range from medium acid to strongly acid. The B3 horizon ranges from slightly acid to medium acid. The depth to bedrock ranges from 4 to 8 feet.

Capshaw silt loam, 2 to 5 percent slopes (CaB).—This soil is moderately well drained and is on benches and in low-lying areas on uplands (fig. 9). The profile is the one described as representative for the series. The surface layer is about 6 to 10 inches thick. In some places, numerous small black concretions are in the subsoil. The depth to limestone bedrock ranges from 4 to 8 feet.

Included with this soil in mapping are a few small areas of soils that have a fragipan.

The upper part of the subsoil is strongly acid. The lower part is medium acid to slightly acid. Permeability is slow in the clayey subsoil, and the available water capacity is moderate.

This soil is moderately well suited to most commonly grown crops. Tobacco and alfalfa should not be grown, however, unless surface drainage is good. Crops give a moderate response to the use of fertilizer and other management practices. Capability unit IIe–2; woodland group 3o7.

Capshaw silt loam, 5 to 12 percent slopes, eroded (CaC2).—This moderately well drained soil has short slopes. The surface layer is brown, friable silt loam about 4 to 7 inches thick. The subsoil is yellowish-brown, firm

Figure 9.—**A field of Capshaw silt loam, 2 to 5 percent slopes, used for growing hay. Lehew soils are on the high, wooded ridge in the background.**

silty clay loam in the upper 15 to 18 inches. This is underlain by mottled yellowish-brown and gray clay. A few, small, black concretions are commonly scattered throughout the soil. The depth to limestone bedrock ranges from 4 to 8 feet.

This soil has moderate available water capacity and permeability is slow in the subsoil. The upper part of the subsoil is medium acid to strongly acid, and the lower part is medium acid to slightly acid.

This soil is well suited to pasture and small grains and moderately well suited to most other crops. Because of wetness in the lower part of the subsoil, the soil is not well suited to tobacco and alfalfa. Capability unit IIIe–3; woodland group 3o7.

Chagrin Series

The Chagrin series consists of brown, well-drained, nearly level, loamy soils in bottoms. Most areas are along the larger creeks.

In a representative profile, the surface layer is brown silt loam about 8 inches thick. The upper part of the subsoil is dark yellowish-brown, friable silt loam about 16 inches thick. The lower part is dark yellowish-brown, very friable loam about 26 inches thick.

The Chagrin soils have high available water capacity and moderate permeability. The natural fertility of these soils is high.

These soils are used for hay, row crops, and pasture. Their use for crops is limited only by the hazard of flooding. Flooding is of short duration, however, and usually occurs when there is little or no risk of damage to crops.

Representative profile of Chagrin silt loam:

Ap—0 to 8 inches, brown (10YR 4/3) silt loam; moderate, fine, granular structure; friable; medium acid; gradual, smooth boundary.

B21—8 to 24 inches, dark yellowish-brown (10YR 4/4) silt loam; weak, fine, subangular blocky structure; friable; medium acid; clear, smooth boundary.

B22—24 to 50 inches, dark yellowish-brown (10YR 4/4) loam; weak, fine, subangular blocky structure; very friable; medium acid.

In some places gray mottles occur below a depth of about 30 inches. The texture of each layer is silt loam, loam, or rarely sandy loam. The color of each layer is brown or dark yellowish brown. Reaction is medium acid or slightly acid throughout the profile.

Chagrin silt loam (Ch).—This is the only Chagrin soil mapped in the county. This deep, well-drained soil is in nearly level bottoms along the major creeks. It is brownish, friable silt loam or loam to a depth of 3 feet or more. In some areas gray mottles are below a depth of about 30 inches.

This soil is medium acid or slightly acid throughout. It is high in natural fertility, has high available water capacity, and is moderately permeable.

This soil is well suited to most crops. The main limitation to its use for crops is the hazard of occasional flooding in some areas. Flooding is of short duration, however, and usually occurs when there is little or no risk of damage to crops. Capability unit I–1; woodland group 2o7.

Colbert Series

The Colbert series consists of moderately well drained soils that have a yellowish, very plastic clay subsoil. These soils are in areas underlain by clayey limestone. Slopes range from 3 to 12 percent.

In a representative profile the surface layer is brown silt loam about 6 inches thick. The subsoil extends to a depth of 30 inches. It is yellowish-brown, very plastic clay that ranges from very firm in the upper part to extremely firm in the lower part. Limestone bedrock is at a depth of 30 inches.

The Colbert soils have low available water capacity, and very slow permeability.

These soils are largely in pasture or forests. Some areas are idle.

Representative profile of Colbert silt loam, 3 to 12 percent slopes:

Ap—0 to 6 inches, brown (10YR 4/3) silt loam; strong, fine, granular structure; friable; strongly acid; clear, wavy boundary.

B21t—6 to 15 inches, yellowish-brown (10YR 5/6) clay; strong, medium, angular blocky structure; very firm; very plastic; clay films on faces of peds; strongly acid; gradual, wavy boundary.

B22t—15 to 20 inches, yellowish-brown (10YR 5/6) clay; common, fine, distinct, light olive-brown (2.5Y 5/4) mottles; strong, medium, and coarse, angular blocky structure; extremely firm; very plastic; clay films on faces of peds; strongly acid; gradual, wavy boundary.

B3t—20 to 30 inches, light olive-brown (2.5Y 5/4) clay; strong, fine and medium, angular blocky structure; extremely firm; very plastic; clay films on faces of peds; neutral.

R—30 inches +, limestone bedrock.

The Ap horizon is brown or yellowish-brown silt loam to silty clay. The B3t horizon ranges from neutral to mildly alkaline. In some places gray mottles are in the lower 12 inches of the B horizon. The color of the B2 horizon ranges from yellowish brown to olive brown. The depth to bedrock most commonly is 24 to 30 inches, but ranges from 20 to about 45 inches.

Colbert silt loam, 3 to 12 percent slopes (ClC).—This moderately well drained soil has a yellowish, very plastic

clay subsoil. This soil has the profile described as representative for the series. The depth to limestone bedrock averages about 30 inches.

Included with this soil in mapping are areas that have numerous outcrops of rock.

This soil has a moderately shallow root zone and low available water capacity. It is strongly acid, except in the layer just above bedrock, and permeability is very slow. When this soil is dry, fairly large cracks are evident.

This soil is moderately well suited to pasture and small grains, but poorly suited to most cultivated crops. Several areas are in forest consisting of redcedar, oak, and hickory. Capability unit IVe–3; woodland group 4c2.

Colbert silty clay, 3 to 12 percent slopes, severely eroded (CoC3).—This soil is in small tracts in limestone valleys. The soil is clayey and very plastic and is about 2 feet deep to limestone bedrock. The surface layer is yellowish-brown silty clay about 6 inches thick, and it is made up largely of former subsoil material. The subsoil is yellowish-brown, very plastic clay. Many of the areas have outcrops of limestone.

This soil has low available water capacity, and the subsoil is very slowly permeable.

Most areas of this soil are in pastures, are idle, or have grown up in cedar thickets. Pasture grows fairly well, but much of the growth is during spring and early in summer when moisture is plentiful. This soil is poorly suited to most crops. The soil is hard to work, and a network of cracks forms when it is dry. Capability unit VIe–2; woodland group 5c3e.

Conasauga Series

The Conasauga series consists of moderately well drained soils on uplands. These soils formed in material weathered from calcareous shale. Slopes range from 3 to 12 percent.

In a representative profile the surface layer is brown silt loam about 7 inches thick. The subsoil is firm, plastic silty clay about 29 inches thick. It is yellowish brown in the upper part and light olive brown, mottled with shades of gray, brown, and yellow in the lower part. The substratum is mottled, light olive-brown, firm, plastic clay about 4 inches thick. Shale bedrock is at a depth of 40 inches.

The Conasauga soils have slow permeability, low available water capacity, and low natural fertility.

About half of the acreage of Conasauga soils is in pine and hardwood forests. Cleared areas are used largely for pasture.

Representative profile of Conasauga silt loam, 3 to 12 percent slopes:

Ap—0 to 7 inches, brown (10YR 5/3) silt loam; weak, fine, granular structure; friable; strongly acid; clear, smooth boundary.

B21t—7 to 14 inches, yellowish-brown (10YR 5/4) silty clay; strong, fine and medium, angular blocky structure; firm; clay films on faces of peds; strongly acid; gradual, smooth boundary.

B22t—14 to 19 inches, yellowish-brown (10YR 5/6) silty clay; strong, medium, angular blocky structure; firm; plastic; thick, continuous clay films; strongly acid; gradual, smooth boundary.

B23t—19 to 26 inches, light olive-brown (2.5Y 5/6) silty clay; few, fine, distinct, grayish-brown (2.5Y 5/2) mottles; strong, fine, angular blocky structure; firm; plastic; thick, continuous clay films; strongly acid; gradual, smooth boundary.

B3t—26 to 36 inches, light olive-brown (2.5Y 5/6) silty clay; many, medium, distinct, pale-yellow (2.5Y 7/4) mottles and few, medium, distinct, grayish-brown (2.5Y 5/2) mottles; strong, coarse, angular blocky structure; firm; plastic; thick, continuous clay films; many, medium, black smears and concretions; strongly acid; gradual, smooth boundary.

C—36 to 40 inches, light olive-brown (2.5Y 5/6) silty clay; common, medium, faint, light olive-gray (5Y 6/2) mottles; massive; firm; common black stains and concretions; many olive (5Y 5/3 or 6/3) shale fragments; neutral.

R—40 inches +, calcareous shale bedrock.

The Ap horizon ranges in thickness from 4 to 9 inches. The B2 and B3 horizons have a texture of silty clay or clay. The C horizon ranges from medium acid to mildly alkaline. The color of the B2 horizon ranges from yellowish brown to light olive brown. Gray mottles commonly appear below a depth of 18 inches. The depth to bedrock ranges from 2 to 4 feet and averages about 3 feet.

Conasauga silt loam, 3 to 12 percent slopes (CsC).—This is the only Conasauga soil mapped in the county. This soil is moderately well drained, and has a yellowish, plastic clayey subsoil. It formed in material weathered from calcareous shale. Depth to shale bedrock ranges from 2 to 4 feet.

This soil is low in natural fertility. It is strongly acid, except in the thin layer just above bedrock. This layer ranges from medium acid to mildly alkaline. Available water capacity is low, and permeability is slow.

This soil is moderately well suited to pasture and small grains. It is not well suited to most row crops. Capability unit IVe–3; woodland group 3c2.

Decatur Series

The Decatur series consists of deep, well-drained, undulating to hilly soils.

In a representative profile the surface layer is dark reddish-brown silt loam about 6 inches thick. The upper 4 inches of the subsoil is dark reddish-brown, friable silty clay loam. The lower part is dark-red, firm clay about 50 inches thick.

The Decatur soils have moderate permeability and medium natural fertility. These soils have high available water capacity, except where they are gravelly, and then the available water capacity is moderate.

These soils have a wide variety of uses including row crops, hay, and pasture.

Representative profile of Decatur silt loam, 5 to 12 percent slopes, eroded:

Ap—0 to 6 inches, dark reddish-brown (5YR 3/4) silt loam; moderate, medium, granular structure; friable; strongly acid; clear, smooth boundary.

B1t—6 to 10 inches, dark reddish-brown (5YR 3/4) silty clay loam; moderate, fine, subangular blocky structure; friable; thin, patchy clay films; strongly acid; clear, smooth boundary.

B21t—10 to 18 inches, dark-red (2.5YR 3/6) clay; moderate, medium, subangular blocky structure; firm; thin, patchy clay films; strongly acid; gradual, smooth boundary.

B22t—18 to 42 inches, dark-red (2.5YR 3/6) clay; strong, medium, subangular blocky structure; firm; thick, continuous clay films; strongly acid; gradual, smooth boundary.

B23t—42 to 60 inches, dark-red (2.5YR 3/6) clay; moderate, medium, subangular blocky structure; firm; patchy clay films; few, fine, chert fragments; strongly acid.

The Ap horizon ranges in color from dark reddish brown to dark red, and the texture is silt loam, gravelly silt loam, silty clay loam, or gravelly silty clay loam. The Ap horizon ranges from 4 to 10 inches in thickness. The B1 and B2 horizons are gravelly clay loam, gravelly clay, silty clay loam, or clay in texture. The B1 horizon is dark reddish brown or dark red in color. Content of rounded gravel or fragments of chert in each layer ranges from 0 to about 30 percent, by volume. The soil is strongly acid or very strongly acid throughout, except the surface layer is less acid where it has been limed. The depth to bedrock is more than 6 feet. Limestone bedrock underlies most of these soils.

Decatur silt loam, 2 to 5 percent slopes, eroded (DaB2).—This deep, well-drained soil is in small areas on the tops of low hills surrounded by other Decatur soils. This soil has a surface layer consisting of 4 to 8 inches of dark reddish-brown silt loam. The subsoil is dark-red clay that is several feet thick.

Except where it has been limed, this soil is strongly acid or very strongly acid throughout. It has medium natural fertility and high available water capacity.

This soil responds well to fertilization and is well suited to all crops commonly grown in the county. Capability unit IIe–1; woodland group 3o7.

Decatur silt loam, 5 to 12 percent slopes, eroded (DaC2).—This deep soil is on short slopes mostly in limestone valleys. It is dark reddish brown and dark red in color and has a clayey subsoil. The profile is the one described as representative for the series.

This soil has a deep root zone, is moderately permeable, and has high available water capacity. It is strongly acid or very strongly acid, except where it has been limed, and has medium natural fertility.

This soil is especially well suited to pasture and hay crops, and it is well suited to most other crops. Slope and erosion control are the main management problems. Capability unit IIIe–1; woodland group 3o7.

Decatur silt loam, 12 to 25 percent slopes, eroded (DaD2).—This deep, well-drained soil is on short hillsides. It has a dark reddish-brown silt loam surface layer, 4 to 7 inches thick, and a dark-red clay subsoil that is many feet thick.

The subsoil is moderately permeable, is well aerated, and has a deep root zone. The soil is strongly acid or very strongly acid, except where it has been limed. Available water capacity is high, and natural fertility is medium.

The strong slope is the main limitation in using this soil. It is well suited to pasture and hay crops, but is only moderately well suited to cultivated crops. Capability unit IVe–1; woodland group 3o7.

Decatur gravelly silt loam, 5 to 12 percent slopes, eroded (DbC2).—This soil is deep, well drained, and has a dark-red subsoil. It is mostly in small tracts on the tops of high ridges. The surface layer consists of 5 to 10 inches of dark reddish-brown gravelly silt loam. The subsoil is dark-red gravelly clay loam or gravelly clay, several feet thick. The amount of rounded gravel throughout the soil ranges up to about 25 percent, by volume. Limestone bedrock underlies most of this soil at a depth of 6 feet or more.

Included with this soil in mapping are a few areas of soils that have yellowish-red cherty clay below a depth of about 3 feet.

This soil has moderate available water capacity, medium natural fertility, and is strongly acid or very strongly acid. It has a deep, moderately permeable root zone, and crops give fair response to management.

This soil is especially well suited to hay crops, small grains, and pasture, but only moderately well suited to row crops. Most areas are on isolated hilltops that are too small for fields. Capability unit IIIe–2; woodland group 3o7.

Decatur gravelly silt loam, 12 to 20 percent slopes, eroded (DbD2).—This soil is deep, well drained, and has a dark-red subsoil. It is in small tracts on the upper parts of high ridges. The surface layer is dark reddish-brown gravelly silt loam that is 5 to 8 inches thick. Rounded gravel makes up 15 to 30 percent of this layer, by volume. The subsoil is dark-red clay that is several feet thick. Gravel makes up 5 to 25 percent of the subsoil, by volume.

Included with this soil in mapping are a few areas where yellowish-red cherty clay is below a depth of about 3 feet.

This soil has a deep root zone and moderate available water capacity. It is strongly acid or very strongly acid throughout.

It is well suited to pasture plants and other close-growing crops, but it is only moderately well suited to row crops. Most areas are small. They are located near the tops of high ridges and are flanked by steeper slopes. Capability unit IVe–2; woodland group 3o7.

Decatur silty clay loam, 5 to 12 percent slopes, severely eroded (DcC3).—This rolling soil is on short slopes of low hills. It is deep and well drained. The surface layer is dark reddish-brown silty clay loam 4 to 7 inches thick. The subsoil is dark-red clay several feet thick.

Included with this soil in mapping are a few areas that have a surface layer of dark-red clay and a few areas that contain a few shallow gullies. There may be a few rounded pebbles or cobblestones in any area.

This soil has a deep root zone and moderate available water capacity. It is moderately permeable, and it is strongly acid or very strongly acid.

The silty clay loam surface layer is slightly difficult to work. Row crops are only moderately well suited. The soil is well suited to pasture, hay crops, and small grains. Capability unit IVe–1; woodland group 4c3e.

Decatur silty clay loam, 12 to 20 percent slopes, severely eroded (DcD3).—This soil is on side slopes below the more rolling Decatur soils. The surface layer is dark-red silty clay loam about 4 to 6 inches thick. The subsoil is dark-red clay that is several feet thick. In places as much as 15 percent of the lower 24 inches of the subsoil is partly weathered chert fragments.

This soil is strongly acid or very strongly acid throughout. It is medium to low in natural fertility and has moderate available water capacity. Runoff is rapid.

This soil is well suited to close-growing crops and is only moderately well suited to cultivated crops. Capability unit IVe–1; woodland group 4c3e.

Decatur gravelly silty clay loam, 12 to 20 percent slopes, eroded (DdD2).—This deep, well-drained soil is on hillsides. The surface layer is dark reddish-brown gravelly silty clay loam. It is about 6 inches thick and is made up largely of former subsoil material. The subsoil is dark-red clay that is several feet thick and contains numerous rounded pebbles.

Included with this soil in mapping are a few areas that contain shallow gullies. In a few places yellowish-red cherty clay is below a depth of 3 feet.

This soil has a deep root zone and moderate available water capacity. It is strongly acid or very strongly acid throughout. The gravel in the surface layer makes the soil difficult to work.

This soil is well suited to pasture, but it is poorly suited to row crops. Capability unit IVe–2; woodland group 4c3e.

Dowellton Series

The Dowellton series consists of grayish, poorly drained, nearly level soils on low stream terraces and in low depressed areas on uplands.

In a representative profile the surface layer is dark-gray and grayish-brown silt loam about 12 inches thick. The upper 8 inches of the subsoil is dark-gray, firm and plastic silty clay loam. Below this, to a depth of 55 inches, the subsoil is gray and light-gray, firm and plastic silty clay.

The Dowellton soils have slow permeability and moderate available water capacity. The water table is near the surface for long periods during winter and spring.

These soils are used primarily for pasture.

Representative profile of Dowellton silt loam:

Ap—0 to 9 inches, dark-gray (5Y 4/1) silt loam; moderate, fine, granular structure; friable; strongly acid; clear, smooth boundary.

A3—9 to 12 inches, grayish-brown (2.5Y 5/2) silt loam; common, fine, distinct, strong-brown (7.5YR 5/6) and dark grayish-brown (10YR 3/2) mottles; moderate, fine, granular structure; friable; strongly acid; clear, smooth boundary.

B21tg—12 to 20 inches, dark-gray (10YR 4/1) silty clay loam; moderate, fine, blocky structure; firm, plastic; strongly acid; gradual, smooth boundary.

B22tg—20 to 50 inches, gray (10YR 5/1) silty clay; many, fine, distinct, strong-brown (7.5YR 5/6) mottles; moderate, fine, angular blocky structure; firm, plastic; patchy clay films; strongly acid; gradual, wavy boundary.

B3g—50 to 55 inches, light-gray (10YR 6/1) silty clay; weak, coarse, angular blocky structure; firm, plastic; 10 percent, by volume, gravel up to one-quarter inch in diameter; slightly acid.

The Ap horizon is grayish brown or dark gray and ranges from 6 to 12 inches in thickness. The B21tg horizon is silty clay loam or silty clay. The B22tg and B3g horizons are clay or silty clay. The A and B2 horizons are strongly acid or medium acid. The B3 horizon is slightly acid or neutral. The depth to bedrock ranges from about 2 to 5 feet .

Dowellton silt loam (Do).—This is the only Dowellton soil mapped in the county. This nearly level soil is in small areas on stream terraces or in low depressed areas in uplands. It is dominantly gray, and it is poorly drained.

This soil is medium acid or strongly acid in the upper part and slightly acid or neutral in the lower part. The subsoil is slowly permeable and is saturated with water for long periods in winter and spring, but it dries out in summer and fall. The available water capacity is moderate.

This soil is suited to soybeans, tall fescue, and other crops that are tolerant of wetness. Capability unit IIIw–1; woodland group 3w9.

Dunning Series

The Dunning series consists of dark, poorly drained soils that have a clayey subsoil. These soils are in bottoms along drainageways that originate in areas underlain by clayey limestone.

In a representative profile the surface layer is very dark grayish-brown silty clay loam about 7 inches thick. The subsoil is very firm and plastic clay that is very dark gray in the upper 12 inches and dark gray to a depth of 60 inches or more.

The Dunning soils have slow permeability and moderate available water capacity.

These soils are used primarily for pasture.

Representative profile of Dunning silty clay loam:

Ap—0 to 7 inches, very dark grayish-brown (2.5Y 3/2) silty clay loam; strong, fine, granular structure; firm; neutral; clear, smooth boundary.

B21g—7 to 19 inches, very dark-gray (5Y 3/1) clay; common, fine, distinct, dark yellowish-brown (10YR 4/4) mottles; strong, coarse, angular blocky structure; very firm and plastic; neutral; gradual, smooth boundary.

B22g—19 to 46 inches, dark-gray (N 4/0) clay; many, medium, distinct, yellowish-brown (10YR 5/6) mottles; moderate, fine, angular blocky structure; very firm and plastic; few, fine, angular pebbles; neutral; gradual, wavy boundary.

B3g—46 to 60 inches, dark-gray (N 4/0) clay; many, coarse, distinct, yellowish-brown (10YR 5/6) mottles; weak, fine, angular blocky structure; very firm and plastic; neutral.

The Ap horizon ranges from 7 to 12 inches in thickness. The B horizon is clay or silty clay. The soil is slightly acid or neutral in each layer.

Dunning silty clay loam (Du).—This is the only Dunning soil mapped in the county. This nearly level soil is in narrow strips of bottom land along drainageways that originate in areas underlain by clayey limestone. This soil is dark, poorly drained, and clayey in the subsoil. Some areas are subject to occasional flooding.

This soil is slightly acid or neutral throughout. The subsoil is slowly permeable. It is saturated with water for long periods in winter and spring, but dries out in summer and fall.

This soil is too wet for crops such as tobacco and alfalfa. It is suited to crops that can be planted late, such as soybeans, and crops that can tolerate wetness, such as tall fescue. Capability unit IIIw–1; woodland group 2w9.

Egam Series

The Egam series consists of well drained and moderately well drained, nearly level soils in bottoms. These soils are in long, narrow strips along the Tennessee River.

In a representative profile the surface layer is very dark grayish-brown silty clay loam about 20 inches thick. The upper part of the subsoil is dark-brown, firm silty clay loam about 14 inches thick. Underlying this layer is 16 inches of mottled, dark-brown, firm silty clay. The lower part of the subsoil is brown, mottled, firm silty clay loam about 16 inches thick.

The Egam soils have moderately slow permeability and high available water capacity.

These soils are used for row crops, hay, and pasture. Summer annual crops are dominant.

Representative profile of Egam silty clay loam:

Ap—0 to 10 inches, very dark grayish-brown (10YR 3/2) silty clay loam; strong, fine, granular structure; friable; medium acid; clear, smooth boundary.

A1—10 to 20 inches, very dark grayish-brown (10YR 3/2) silty clay loam; strong, fine, subangular blocky structure; firm; slightly acid; gradual, smooth boundary.

B21—20 to 34 inches, dark-brown (10YR 3/3) silty clay loam; strong, fine and medium, subangular blocky structure; firm; slightly acid; gradual, smooth boundary.

B22—34 to 50 inches, dark-brown (10YR 3/3) silty clay; few, fine, faint, dark grayish-brown mottles; strong, fine and medium, subangular blocky structure; firm; few, fine, mica flakes; slightly acid; gradual, smooth boundary.

B23—50 to 66 inches, brown (10YR 4/3) silty clay loam; common, fine, faint, dark grayish-brown mottles; moderate, fine, subangular blocky structure; firm; slightly acid.

The A1 horizon ranges from friable to firm. Clay content of the B horizon ranges from about 35 to 42 percent. Reaction is medium acid or slightly acid throughout the profile.

Egam silty clay loam (Eg).—This is the only Egam soil mapped in the county. This nearly level soil is in first bottoms in long narrow strips parallel to the Tennessee River. It is well drained to moderately well drained.

This soil is medium acid or slightly acid throughout. Permeability is moderately slow, and available water capacity is high.

This soil is suited to a wide range of crops. It has no significant limitations for a wide range of uses. Upstream dams protect nearly all of the areas from flooding. Capability unit I–2; woodland group 2o7.

Emory Series

The Emory series consists of deep, well-drained, nearly level loamy soils. These soils formed in local alluvium that mostly washed from Decatur soils. They are in small areas along drainageways and in depressions.

In a representative profile the upper 38 inches is dark reddish-brown, friable silt loam. The next 12 inches is reddish-brown, friable silty clay loam that has a few brownish mottles.

The Emory soils have moderately rapid permeability and high available water capacity.

These soils are used primarily for row crops or hay and some pasture.

Representative profile of Emory silt loam:

Ap—0 to 9 inches, dark reddish-brown (5YR 3/3) silt loam; moderate, medium, granular structure; friable; medium acid; gradual, wavy boundary.

B—9 to 30 inches, dark reddish-brown (5YR 3/4) silt loam; moderate, medium, granular structure; friable; strongly acid; gradual, smooth boundary.

A1b—30 to 38 inches, dark reddish-brown (5YR 3/2) silt loam; moderate, medium, granular structure; friable; strongly acid; gradual, smooth boundary.

Bb—38 to 50 inches, reddish-brown (5YR 4/4) silty clay loam; few, medium, distinct, strong-brown (7.5YR 5/6) mottles; weak, medium, subangular blocky structure; friable; strongly acid.

In some places the A1b horizon is lacking. Reaction is medium acid or strongly acid throughout. The Bb horizon is yellowish red or reddish brown, and, in some places, it has grayish mottles. In some places the soil, at depths comparable to that of the Bb horizon, has evidence of illuvial clay and is considered a Bt horizon.

Emory silt loam (Em).—This is the only Emory soil mapped in the county. This nearly level, loamy soil is deep, well drained, and dark reddish brown in color. It is in narrow strips along intermittent drainageways and in small areas in depressions. A few areas are larger than 3 acres in size. This soil is dark reddish-brown, friable silt loam to a depth of 3 feet or more.

Included with this soil in mapping are a few areas that have a surface layer of dark-red clay that is recent overwash from adjacent eroded slopes. A few areas have gray mottles below a depth of about 2 feet.

This soil has a deep root zone and high available water capacity. It is medium acid to strongly acid throughout.

This soil is easy to work, and crops respond extremely well to fertilizer and lime. This soil is well suited to a wide range of crops, and it is one of the more suitable soils in the county for row crops. The main limitation is the small size of the areas. Capability unit I–1; woodland group 2o7.

Ennis Series

The Ennis series consists of deep, well-drained, nearly level, brown loamy soils. These soils are in narrow strips in bottoms and depressions. They formed in recent local alluvium washed mostly from Bodine and Fullerton soils.

In a representative profile the soil is silt loam to a depth of 50 inches. A few fragments of chert up to 3 inches across are in the soil. The color of the soil is brown and yellowish brown.

The Ennis soils have moderately rapid permeability and high available water capacity, except that the available water capacity is moderate where they are cherty.

These soils have a wide variety of uses including row crops, hay, pasture, and some forest.

Representative profile of Ennis silt loam:

Ap—0 to 10 inches, brown (10YR 4/3) silt loam; moderate, medium, granular structure; friable; 10 percent, by volume, is angular chert fragments up to 1 inch across; strongly acid; gradual, smooth boundary.

B—10 to 26 inches, dark yellowish-brown (10YR 4/4) silt loam; weak, fine, subangular blocky and moderate, medium, granular structure; friable; 5 percent, by volume, is angular chert fragments up to 1 inch across; strongly acid; gradual, wavy boundary.

A1b—26 to 38 inches, brown (10YR 4/3) silt loam; weak, fine, subangular blocky structure; friable; 10 percent, by volume, is angular chert fragments up to 1 inch across; strongly acid; gradual, wavy boundary.

C—38 to 50 inches, yellowish-brown (10YR 5/4) silt loam; massive; friable; 10 percent, by volume, is angular chert fragments up to 3 inches across; strongly acid.

The B horizon color ranges from brown to dark yellowish brown. Content of chert fragments in each layer ranges from a small percentage to about 30 percent, by volume. In some places grayish mottles are below a depth of about 2½ feet. Reaction is strongly acid, except the surface layer is less acid where it has been limed.

Ennis silt loam (En).—This nearly level soil is in narrow strips in bottoms and in small areas in depressions. It is deep, well drained, and loamy. The profile is the one described as representative for the series. Most areas have a few angular fragments of chert on the surface and in

the soil. In some areas there are a few gray mottles below a depth of about 30 inches, indicating that the soil is saturated with water for short periods below that depth.

This soil has a deep root zone and high available water capacity. Permeability is moderately rapid. The soil is moderately low in natural fertility, and it is strongly acid where it is not limed.

This soil is easy to work and to keep in good tilth. Crops respond extremely well to lime and fertilizer. Most areas are only 2 or 3 acres in size, and this is one of the main limitations to using the soil. This soil is well suited to crops that are commonly grown in the county, and it can be cultivated every year. Capability unit I–1; woodland group 2o7.

Ennis cherty silt loam (Eo).—This soil is deep, well-drained, loamy, and nearly level. It has numerous angular fragments of chert rock throughout. This soil is in long narrow strips along intermittent drainageways and in small areas in depressions. Most areas are less than three acres in size. The surface layer consists of 8 to 12 inches of brown, friable cherty silt loam. The subsoil is friable cherty silt loam about 2 feet thick. Angular fragments of chert make up from 15 to 30 percent of the soil, and range up to about 3 inches across.

Included with this soil in mapping are small areas that have gray mottles below a depth of 30 inches, indicating some waterlogging below that depth.

This soil is strongly acid, except the surface layer is less acid where lime has been applied. This soil has a deep root zone and moderate available water capacity. Permeability is moderately rapid. Most areas receive runoff and overwash from adjacent slopes.

Except for the chert fragments, this soil is easy to work, and crops growing on it give good response to fertilization. Several of the areas are in narrow hollows that are wooded, but most are used for a wide variety of crops. The chert fragments and the small size of the areas are the main limitations. Capability unit IIs–1; woodland group 2o7.

Etowah Series

The Etowah series consists of deep, well-drained, loamy soils on terraces, toe slopes, and fans at the base of higher ridges (fig. 10). Slopes range from 2 to 12 percent.

In a representative profile the surface layer is dark-brown silt loam about 8 inches thick. The subsoil, to a depth of 60 inches, is friable silty clay loam. The upper 6 inches is reddish brown, and the rest is yellowish red.

The Etowah soils have moderate permeability and high available water capacity, except where they are gravelly the available water capacity is moderate.

These soils have a wide variety of uses, including row crops, small grains, hay, and pasture.

Figure 10.—Area of Etowah soils used to grow small grains. Steep Lehew soils are on the ridges in the background, and Shouns soils are in the fields at the base of the ridges.

Representative profile of Etowah silt loam, 2 to 5 percent slopes:

Ap—0 to 8 inches, dark-brown (7.5YR 3/2) silt loam; moderate, medium, granular structure; very friable; few chert fragments; strongly acid; clear, smooth boundary.

B1t—8 to 14 inches, reddish-brown (5YR 4/4) silty clay loam; moderate, fine, subangular blocky structure; friable; few, fine, chert fragments; thin, patchy clay films; strongly acid; clear, smooth boundary.

B21t—14 to 24 inches, yellowish-red (5YR 4/6) silty clay loam; moderate, medium, subangular blocky structure; friable; few, fine, chert fragments; thin, continuous clay films; strongly acid; clear, smooth boundary.

B22t—24 to 50 inches, yellowish-red (5YR 4/6) silty clay loam; moderate, medium, subangular blocky structure; friable; common, fine, chert fragments; thin, continuous clay films; very strongly acid; gradual, smooth boundary.

B3t—50 to 60 inches, yellowish-red (5YR 4/8) silty clay loam; few, fine, distinct, pale-brown (10YR 6/3) mottles; moderate, medium, subangular blocky structure; friable; thin, continuous clay films; common, fine, chert fragments; few black stains; very strongly acid.

The Ap horizon ranges in thickness from 4 to 10 inches. The B horizon is yellowish red, red, or reddish brown in color. The amount of chert fragments or rounded gravel in each layer ranges from very few to about 30 percent of the volume. Reaction ranges from strongly acid to very strongly acid throughout, except the surface layer is less acid where it has been limed.

Etowah silt loam, 2 to 5 percent slopes (EsB).—This loamy soil is deep, well drained, and brownish and reddish in color. It is on broad, gently sloping benches and in small tracts on the tops of low hills. This soil has the profile described as representative for the series.

Included with this soil in mapping are soils that contain a few rounded pebbles and chert fragments. Also included are areas of soils that have yellow or red, plastic clay below a depth of about three feet.

This soil has a deep root zone and high available water capacity. Permeability and natural fertility are moderate. The soil is strongly acid where lime has not been applied.

This soil is well suited to all crops commonly grown in the county. It is easy to work, and crops respond well to fertilizer and management (fig. 11). Capability unit IIe–1; woodland group 2o7.

Etowah silt loam, 5 to 12 percent slopes (EsC).—This loamy soil is deep and well drained. It is mostly in 2- to 5-acre tracts on short slopes. The surface layer is dark-brown, friable silt loam about 4 to 8 inches in thickness.

Figure 11.—Small grain on Etowah silt loam, 2 to 5 percent slopes. This soil is well suited to all the crops commonly grown in the county.

The subsoil is reddish-brown or yellowish-red, friable silty clay loam that is several feet thick.

Included with this soil in mapping are a few areas that have a yellowish or reddish, plastic clay layer below a depth of about 2 feet, and a few spots of soil that have a surface layer of silty clay loam.

This soil has a deep root zone, high available water capacity, and moderate permeability. It is medium in natural fertility and, where lime has not been added, is strongly acid throughout.

This soil is well suited to all crops commonly grown in the county. Crops respond extremely well to fertilization. Slope is the main limitation to growing row crops every year. Capability unit IIIe–1; woodland group 2o7.

Etowah gravelly silt loam, 2 to 5 percent slopes (EtB).—This deep, well-drained soil has many rounded pebbles on the surface and in the soil. The surface layer is dark-brown gravelly silt loam about 6 to 10 inches thick. The subsoil is yellowish-red or reddish-brown gravelly silty clay loam that is several feet thick. The content of rounded pebbles in the soil ranges from 15 to 30 percent, by volume.

Included with this soil in mapping are a few areas of a soil that has very few pebbles in the subsoil. Also included are areas of a soil that has a layer of yellow or red plastic clay below a depth of 30 inches.

This soil has moderate available water capacity, and it is strongly acid where it is not limed.

Crops respond well to fertilizers and good management. This soil is well suited to pasture, small grains, and hay. It is only moderately well suited to row crops, mainly because of gravel content. Capability unit IIe–1; woodland group 2o7.

Etowah gravelly silt loam, 5 to 12 percent slopes (EtC).—This soil is mainly in 2- to 5-acre tracts on the tops of hills. It is deep and well drained, but it has many rounded pebbles on the surface and in the soil. The surface layer is dark-brown gravelly silt loam about 4 to 8 inches thick. The subsoil is reddish-brown or yellowish-red gravelly silty clay loam that is several feet thick.

Included with this soil in mapping are a few areas that have red or yellow, plastic clay below a depth of about 30 inches. Also, a few areas are included that have a subsoil practically free of gravel.

This soil is moderately permeable and has moderate available water capacity. Where it is not limed, it is strongly acid, and it is low in natural fertility.

Crops respond well to fertilization and good management. Except for the gravel and slope, the soil is easy to work. This soil is moderately well suited to row crops and well suited to pasture, small grains, and hay. Capability unit IIIe–2; woodland group 2o7.

Fullerton Series

The Fullerton series consists of deep, well-drained soils on hills and ridges. These soils formed in material weathered from cherty limestone. Slopes range from 5 to 45 percent, but are mostly 8 to 25 percent.

In a representative profile the surface layer is brown cherty silt loam about 11 inches thick. The upper 2 inches of the surface layer is stained dark by organic matter. Beneath this is 4 inches of strong-brown, friable cherty silt loam. The upper 4 inches of the subsoil is yellowish-red, friable cherty silty clay loam. The lower part is yellowish-red and red, firm cherty clay to a depth of 60 inches.

The Fullerton soils have moderate permeability and low natural fertility. Available water capacity is moderate, except where the soils have large amounts of chert fragments the available water capacity is low.

A large part of the acreage is in forest. The rest is used mostly for pasture.

Representative profile of Fullerton cherty silt loam, 12 to 20 percent slopes:

A1—0 to 2 inches, dark grayish-brown (10YR 4/2) cherty silt loam; moderate, fine, granular structure; friable; strongly acid; abrupt, smooth boundary.

A2—2 to 11 inches, brown (10YR 5/3) cherty silt loam; moderate, medium, granular structure; friable; very strongly acid; clear, smooth boundary.

A3—11 to 15 inches, strong-brown (7.5YR 5/6) cherty silt loam; moderate, medium, granular structure; friable; very strongly acid; clear, smooth boundary.

B1—15 to 19 inches, yellowish-red (5YR 4/6) cherty silty clay loam; moderate, fine, subangular blocky structure; friable; thin, patchy clay films; very strongly acid; clear, smooth boundary.

B21t—19 to 30 inches, red (2.5YR 4/8) cherty clay; few medium, distinct, strong-brown (7.5YR 5/6) and pale-brown (10YR 4/3) mottles; moderate, medium, subangular blocky structure; firm; patchy clay films; very strongly acid; gradual, smooth boundary.

B22t—30 to 50 inches, red (2.5YR 4/8) cherty clay; few, medium, distinct, strong-brown (7.5YR 5/6) and pale-brown (10YR 6/3) mottles; strong, medium, subangular blocky structure; firm; continuous clay films; very strongly acid; gradual, smooth boundary.

B23t—50 to 60 inches, red (2.5YR 4/8) cherty clay; common, medium and coarse, distinct, strong-brown (7.5YR 5/6) and yellowish-brown (10YR 5/6) mottles; strong, medium, subangular blocky structure; firm; continuous clay films; very strongly acid.

In cultivated areas the Ap horizon is brown, and where it is severely eroded, it is strong brown or yellowish red. The thickness of the A2 horizon ranges from 5 to 12 inches. The B horizon is red or yellowish red, except that the B1 horizon ranges through strong brown. Reaction is strongly acid or very strongly acid, except where lime has been applied. The depth to bedrock ranges from about 10 to 30 feet or more. The amount of angular chert fragments in each horizon ranges from about 5 to 25 percent, by volume.

Fullerton silt loam, 5 to 12 percent slopes (FaC).—This deep, well-drained soil is in small tracts on the tops of hills. There are very few chert fragments on the surface and in the soil. The surface layer is brown silt loam about 5 to 12 inches thick. The upper part of the subsoil is strong-brown to yellowish-red silty clay loam about 4 to 10 inches thick. The lower part is red or yellowish-red clay that is many feet thick.

This soil has moderate permeability and low natural fertility. It is strongly acid or very strongly acid, except where lime has been applied. Available water capacity is moderate. This soil is well suited to cultivated crops. All of the crops commonly grown in the county are adapted to this soil. This soil responds well to lime and fertilizer. Capability unit IIIe–1; woodland group 3o7.

Fullerton silt loam, 12 to 20 percent (FaD).—This deep, well-drained soil is on hillsides. There are very few chert fragments on the surface or in the soil. The surface layer is brown silt loam about 5 to 8 inches thick. The upper part of the subsoil is yellowish-red silty clay loam about 4 to 8 inches thick. The lower part consists of several feet of red clay.

Included with this soil in mapping are a few areas that have a strong-brown or yellowish-red surface layer where the original surface has been removed by erosion.

This soil is strongly acid or very strongly acid throughout and has low natural fertility. Available water capacity is moderate.

All of the commonly grown crops are adapted, but this soil is too steep for frequent cultivation. Capability unit IVe–1; woodland group 3o7.

Fullerton cherty silt loam, 5 to 12 percent slopes (FcC).—This soil is mostly in tracts of 1 to 5 acres on the tops of hills and ridges. It is deep and well drained and has many chert fragments on the surface and in the soil.

In a representative profile the surface layer is brown, friable cherty silt loam about 5 to 12 inches thick. The subsoil is yellowish-red or red cherty clay that is many feet thick. Angular chert fragments make up 15 to 25 percent of the soil volume. They range from about 1 to 4 inches across.

This soil is strongly acid or very strongly acid throughout and has low natural fertility. It has a deep root zone and moderate available water capacity. Permeability is moderate. The chert fragments on the surface interfere with farming operations, and those in the soil reduce the available water capacity.

This soil is well suited to crops that make a large part or all of their growth in spring. Examples are small grains, hay, and pasture plants. It is less well suited to corn and other crops that grow mostly in summer. Crops give a fair to good response to fertilization and other management. Nearly half of the acreage is in forest. Capability unit IIIe–2; woodland group 3o7.

Fullerton cherty silt loam, 12 to 20 percent slopes (FcD).—This deep, well-drained soil is on hillsides. It contains many angular chert fragments ranging from about 1 to 4 inches in size. This soil has the profile described as representative for the series. The depth to limestone bedrock is 12 to 30 feet or more. Chert fragments make up about 15 to 25 percent of the soil volume.

Included with this soil in mapping are a few small eroded spots where the surface layer is strong-brown cherty silty clay loam.

This soil has low natural fertility and is strongly acid or very strongly acid throughout. It has moderate available water capacity and a very deep, moderately permeable root zone.

About one-half of the acreage is in cutover hardwood forest, and the other half is used mostly for pasture. This soil is suited to pasture plants, but because of the strong slope and chert fragments, it is rather poorly suited to cultivation. Plants growing on this soil give a fair to good response to fertilization and other management. Capability unit IVe–2; woodland group 3o7.

Fullerton cherty silt loam, 20 to 30 percent slopes (FcE).—This soil is on long hillsides in an area of cherty hills and ridges that locally is called "gravelly hill land." It is well drained and is 12 to 30 feet or more thick over limestone bedrock. The surface layer is brown, friable cherty silt loam 5 to 10 inches thick. The subsoil is red or yellowish-red cherty clay that is many feet thick. Angular chert fragments make up about 15 to 25 percent of the soil volume. Size of the fragments ranges from about 1 to 4 inches across.

Included with this soil in mapping are a few areas of eroded soils that have a surface layer of cherty silty clay loam.

This soil is strongly acid or very strongly acid, and it has low natural fertility. It has a deep root zone and moderate available water capacity.

About half of the acreage is cleared and is used largely for pasture. If well fertilized and well managed, this soil is suited to pasture. Capability unit VIe–1; woodland group 3r8.

Fullerton cherty silt loam, 30 to 45 percent slopes (FcF).—This soil is mostly next to deeply cut drainageways on ridges that are underlain by cherty limestone. The surface layer is brown cherty silt loam 5 to 10 inches thick. The subsoil is red or yellowish-red cherty clay that is several feet thick. The chert fragments are 1 to 6 inches in diameter and make up 20 to 25 percent of the soil volume.

This soil has low natural fertility, and it is strongly acid or very strongly acid throughout. It has moderate available water capacity.

This soil is poorly suited to crops and pasture because of the steep slope and chert fragments. It is well suited to trees. Capability unit VIIe–1; woodland group 3r8.

Fullerton cherty silty clay loam, 12 to 20 percent slopes, severely eroded (FdD3).—This deep, well-drained soil is on short hillsides. Erosion has been uneven, and the surface layer ranges from yellowish-red cherty silty clay loam, which is dominant, to brown cherty silt loam. The subsoil is red or yellowish-red cherty clay that is many feet thick. Chert fragments, ranging from about 1 to 5 inches across, make up about 15 to 25 percent of the soil volume.

Included with this soil in mapping are a few areas of shallow gullies.

Natural fertility is low, and reaction is strongly acid or very strongly acid throughout. The soil has a deep root zone and low available water capacity.

Most of this soil is used for unimproved pasture. The cherty silty clay loam surface texture and the chert fragments make the soil a little difficult to work. It is moderately well suited to pasture. In most years it is poorly suited to cultivated crops. Capability unit IVe–2; woodland group 4c3e.

Fullerton cherty silty clay loam, 20 to 30 percent slopes, severely eroded (FdE3).—This reddish cherty soil is deep and unevenly eroded. In most places sheet erosion has removed all or nearly all of the original surface layer, leaving a thin surface layer of strong-brown or reddish-yellow cherty silty clay loam. In some areas shallow gullies are common, and there are a few deep gullies in places.

This soil has low natural fertility and low available water capacity. It is strongly acid or very strongly acid.

This soil is poorly suited to crops, moderately suited to pasture, and well suited to trees. Capability unit VIe–1; woodland group 4c3e.

Gullied Land

Gullied land consists of Gullied land, clayey material, and Gullied land, Litz soil material.

Gullied land, clayey material (Gu) consists of areas that are deeply cut by a network of gullies. The gullies

are as deep as 6 feet. In a few places, limestone rock is in the bottom of the gullies. Slopes range from about 10 to 25 percent.

The soil material between the gullies is clayey and generally is strongly acid and low in natural fertility.

This land can be reclaimed because there is adequate soil material for filling the gullies. The use that can be made after reclamation, however, may not justify the high cost of filling and smoothing the gullies. Capability unit VIIe–1; not placed in a woodland group.

Gullied land, Litz soil material (Gv) is a miscellaneous land type that is dissected by a network of gullies. The gullies have cut down to the shale bedrock, and they range up to 4 feet in depth.

The clayey soil material between the gullies has a high content of shale fragments, and in some places the material is largely a mass of shale fragments containing very little soil.

This land is very difficult and expensive to smooth, because there is a lack of soil material to fill the gullies. If filled and smoothed, this land is not productive because of the high content of shale fragments in the fill material. It is poorly suited to pasture. Capability unit VIIs–1; not placed in a woodland group.

Holston Series

The Holston series consists of deep, well-drained, loamy soils that formed in old alluvium. These soils are on high stream terraces, benches, and at the base of hills. Slopes range from 2 to 12 percent.

In a representative profile the surface layer is brown loam about 8 inches thick. The upper part of the subsoil is yellowish-brown, friable loam about 7 inches thick. The lower part is yellowish-brown and strong-brown, friable clay loam to a depth of 60 inches.

The Holston soils are moderately permeable and low in natural fertility. Available water capacity is high, except where the soils are gravelly it is moderate.

These soils are used for pasture, hay, forest, and some row crops. The soils are suited to a wide range of uses. Low natural fertility is the main limitation.

Representative profile of Holston loam, 2 to 5 percent slopes:

Ap—0 to 8 inches, brown (10YR 5/3) loam; moderate, fine, granular structure; very friable; strongly acid; clear, smooth boundary.

B1—8 to 10 inches, yellowish-brown (10YR 5/6) loam; moderate, medium, granular structure; friable; strongly acid; clear, smooth boundary.

B21t—10 to 15 inches, yellowish-brown (10YR 5/8) loam; weak, fine, subangular blocky structure; friable; thin, patchy clay films; strongly acid; gradual, smooth boundary.

B22t—15 to 25 inches, yellowish-brown (10YR 5/8) clay loam; moderate, fine and medium, subangular blocky structure; friable; thin, patchy clay films; strongly acid; gradual, smooth boundary.

B23t—25 to 60 inches, strong-brown (7.5YR 5/8) clay loam; moderate, medium, subangular blocky structure; friable; thin, patchy clay films; strongly acid.

The Ap horizon ranges from 5 to 12 inches in thickness. Texture of the B horizon is loam or clay loam. The B23t horizon is strong brown or yellowish brown. Depth to bedrock, most commonly shale, ranges from about 5 to 8 feet. Gravel content in each horizon ranges from 0 to 25 percent, by volume. These soils are strongly acid, except where lime has been applied.

Holston loam, 2 to 5 percent slopes (HoB).—This yellowish loamy soil is deep and well drained. It is on old, high terraces in tracts of 2 to 5 acres. The profile is the one described as representative for the series. In most places, this soil is underlain by shale bedrock at a depth of about 5 to 8 feet. A few rounded pebbles are in the soil in most places.

This soil is strongly acid and has low natural fertility. It has a deep root zone, moderate permeability, and high available water capacity.

This soil is easy to work, and it is well suited to cultivated crops. Crops respond extremely well to fertilization. Capability unit IIe–1; woodland group 3o7.

Holston loam, 5 to 12 percent slopes (HoC).—This deep, well-drained soil is on old, high terraces. Slopes are short. The surface layer is brown, friable loam, and the subsoil is yellowish-brown, friable clay loam or loam. In most places the soil contains a few rounded pebbles. Depth to bedrock, most commonly acid shale, ranges from about 5 to 8 feet.

Included with this soil in mapping are a few places where reddish clay is at a depth of 2 to 3 feet and a few small areas that have slopes between 12 and 20 percent.

Holston loam is strongly acid and has low natural fertility. The soil has a deep root zone, moderate permeability, and high available water capacity.

This soil is suited to all crops commonly grown in the county. Crops respond well to fertilizer. Slope and low natural fertility are the main limitations. Capability unit IIIe–1; woodland group 3o7.

Holston gravelly loam, 5 to 12 percent slopes (HsC).—This loamy soil is deep and well drained. It is in tracts of 2 to 5 acres on low-lying hills. This soil formed in very old river sediment. The surface layer is brown, friable gravelly loam 5 to 12 inches thick. The subsoil is yellowish-brown, friable gravelly clay loam or gravelly loam that is a few feet thick. Rounded gravel, 1 to 3 inches in diameter, comprises from 15 to 25 percent of the soil volume. In most places the soil is underlain by acid shale at a depth of 5 to 8 feet.

Included with this soil in mapping are a few areas of soils that formed in material weathered from shale and have clay at a depth of 2 to 3 feet. A few small areas are included that have slopes greater than 12 percent and some that have slopes less than 5 percent.

This soil has low natural fertility, and it is strongly acid. This soil has a deep root zone, moderate permeability, and moderate available water capacity.

Several areas of this soil are in hardwood and pine forest. This soil is moderately well suited to crops commonly grown in the county. Crops give fair to good response to fertilization. Capability unit IIIe–2; woodland group 3o7.

Humphreys Series

The Humphreys series consists of deep, well-drained, loamy soils on low stream terraces. Slopes range from 2 to 5 percent.

In a representative profile the surface layer is dark-brown silt loam about 10 inches thick. The upper part of the subsoil is brown, friable silt loam about 22 inches thick. The lower part is brown, friable loam about 23

inches thick. The substratum is brown, friable loam to a depth of 66 inches.

The Humphreys soils have moderate permeability and high available water capacity.

These soils are used for pasture, hay, and row crops.

Representative profile of Humphreys silt loam, 2 to 5 percent slopes:

Ap—0 to 10 inches, dark-brown (10YR 3/3) silt loam; weak, fine, granular structure; friable; strongly acid; clear, smooth boundary.

B21t—10 to 22 inches, brown (7.5YR 4/4) silt loam; weak, fine and medium, blocky structure; friable; clay films, thin and discontinuous; strongly acid; gradual, smooth boundary.

B22t—22 to 32 inches, brown (7.5YR 4/4) silt loam; weak, medium, angular blocky structure; friable; clay films, thin and discontinuous; strongly acid; gradual, smooth boundary.

B23—32 to 41 inches, brown (7.5YR 4/4) loam; few, medium, faint, light yellowish-brown (10YR 6/4) mottles; weak, medium, angular blocky structure; friable; strongly acid; gradual, smooth boundary.

B3—41 to 55 inches, brown (7.5YR 4/4) loam; common, medium, distinct, light yellowish-brown (10YR 6/4) mottles; weak, medium, blocky structure; friable; strongly acid; gradual, smooth boundary.

C—55 to 66 inches, brown (7.5YR 4/4) loam; many, fine, distinct, strong-brown (7.5YR 5/6) and very pale brown (10YR 7/3) mottles; massive; friable; strongly acid.

The texture of the A horizon is silt loam or loam. That of the B horizon is silt loam, loam, silty clay loam, or clay loam. The B horizon is brown, strong brown, or yellowish brown.

Humphreys silt loam, 2 to 5 percent slopes (HuB).—This is the only Humphrey soil mapped in the county. This deep, well-drained, loamy soil is on low stream terraces. Most areas have a few angular chert fragments or some rounded gravel in the soil.

Included with this soil in mapping are a few areas that have slopes less than 2 percent.

This soil has a deep root zone and high available water capacity. It is moderately permeable. The soil is strongly acid, except the surface layer is less acid where limed.

This soil is well suited to the commonly grown crops. The mild slope is the only limitation. Capability unit IIe–1; woodland group 2o7.

Lehew Series

The Lehew series consists of excessively drained, loamy soils that formed in material weathered from interbedded shale, siltstone, and sandstone. These soils are on high, steep, highly dissected ridges (fig. 12). Slopes range from 5 to 60 percent but are dominantly 30 to 60 percent.

In a representative profile the surface layer is reddish-brown channery loam about 7 inches thick. The subsoil, to a depth of 34 inches, is reddish-brown channery loam. Below this is 4 inches of loose rock and reddish-brown loam. Sandstone and shale bedrock is at a depth of 38 inches.

The Lehew soils have moderately rapid permeability and very low available water capacity. They have low natural fertility.

These soils are mostly in forest.

Representative profile of Lehew channery loam, 20 to 60 percent slopes:

A1—0 to 1 inch, very dark grayish-brown (10YR 3/2) channery loam; weak, fine, granular structure; very friable; many, fine and medium roots; very strongly acid; abrupt, smooth boundary.

A2—1 to 7 inches, reddish-brown (5YR 4/3) channery loam; weak, medium, granular structure; very friable; common, fine and medium roots; 25 percent, by volume, fine-grained sandstone and shale fragments; very strongly acid; gradual, wavy boundary.

B21—7 to 22 inches, reddish-brown (5YR 4/3) channery loam; weak, medium and fine, subangular blocky structure; friable; common, fine roots; 35 to 40 percent, by volume, reddish-colored fine-grained sandstone and shale fragments up to 6 inches long; very strongly acid; gradual, wavy boundary.

B22—22 to 34 inches, reddish-brown (2.5YR 4/4) channery loam; weak, medium and fine, subangular blocky structure; friable; few, fine roots; 45 percent, by volume, reddish colored sandstone and shale fragments up to 6 inches long; very strongly acid; gradual, wavy boundary.

R&C—34 to 38 inches, reddish-brown loam coating rock fragments and extending into cracks of reddish rocks; 75 percent rock.

R—38 inches +, interbedded sandstone and shale rock.

The A2 horizon ranges from reddish brown to pale brown in color, and from 4 to 7 inches in thickness. The color of the B horizon is reddish brown over the reddish-colored rocks and light yellowish brown or brown over the light-colored rocks. The content of sandstone and shale fragments in the B horizon ranges from 35 to 60 percent, by volume. Reaction is very strongly acid throughout. Texture of each layer is loam, fine sandy loam, or very fine sandy loam. Depth to bedrock ranges from 20 to 40 inches.

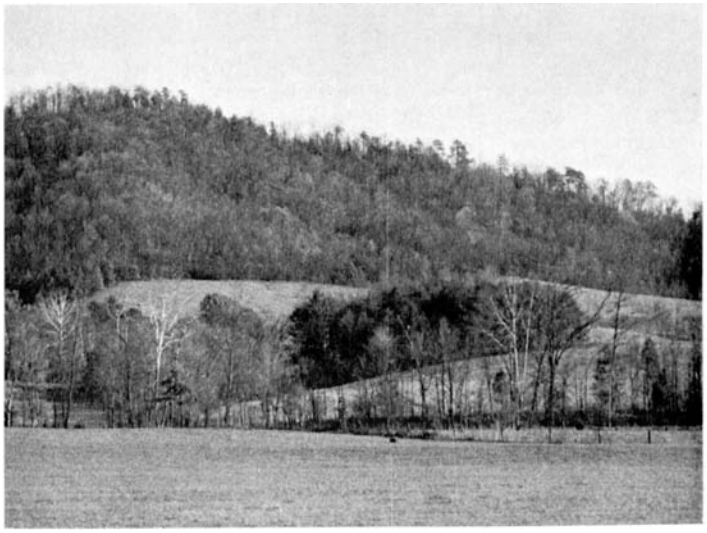

Figure 12.—**Wooded ridges occupied by steep Lehew soils. Shouns soils are on the foot slopes next to the ridges, and nearly level Lindside soils are in the field in the foreground.**

Lehew channery loam, 5 to 20 percent slopes (LeD).—This moderately deep, excessively drained soil is on the tops of high ridges and on outliers from the main ridges. The surface layer is reddish-brown to pale-brown channery loam about 4 to 7 inches thick. The subsoil is brown to reddish-brown channery loam containing 35 to 60 percent, by volume, sandstone and shale fragments. Depth to bedrock is about 20 to 40 inches.

Included with this soil in mapping are some areas where the soil is less than 20 inches deep to bedrock.

This soil is very strongly acid and moderately rapidly permeable. Natural fertility is low, and available water capacity is very low.

This soil is suited to the production of timber. It is also suited to pasture. Capability unit VIs–2; woodland group 4f3.

Lehew channery loam, 20 to 60 percent slopes (LeF).—This soil is excessively drained and moderately deep. It is on the sides of highly dissected ridges. These ridges are underlain by sandstone interbedded with shale and siltstone. The profile is the one described as representative for the series. Depth to bedrock is about 20 to 40 inches.

Included with this soil in mapping are areas of rock outcrop and a few places where the soil is less than 20 inches deep to bedrock.

This soil is very strongly acid. It has low natural fertility, very low available water capacity, and moderately rapid permeability.

This soil is suited to trees. Capability unit VIIs–1; woodland group 4f3.

Lindside Series

The Lindside series consists of moderately well drained, nearly level, loamy soils in bottoms.

In a representative profile the surface layer is brown silt loam about 10 inches thick. The upper part of the subsoil is brown, friable silt loam about 8 inches thick. The lower part is brown silt loam mottled with light brownish gray and strong brown. It is friable and about 14 inches thick. The substratum is brown, friable silty clay loam about 18 inches thick. It is mottled with light brownish gray.

The Lindside soils have moderate permeability and high available water capacity. Some areas are subject to short periods of flooding.

These soils are used for row crops, hay, and pasture.

Representative profile of Lindside silt loam:

Ap—0 to 10 inches, brown (10YR 4/3) silt loam; moderate, medium, granular structure; friable; medium acid; gradual, smooth boundary.

B21—10 to 18 inches, brown (10YR 4/3) silt loam; weak, medium, subangular blocky structure; friable; medium acid; gradual, smooth boundary.

B22—18 to 32 inches, brown (10YR 4/3) silt loam; few, fine, distinct, light brownish-gray and strong-brown mottles; weak, medium, subangular blocky structure; friable; few, fine, black smears; medium acid; clear, smooth boundary.

C3—32 to 50 inches, brown (10YR 4/3) silty clay loam; many, medium, distinct, light brownish-gray (10YR 6/2) mottles; weak, fine, subangular blocky structure to massive; friable; black smears common; medium acid.

Reaction is medium acid or slightly acid throughout. In some places the B22 and C horizons are dominantly gray. The C horizon ranges from silty clay loam to silt loam.

Lindside silt loam (Ln).—This is the only Lindside soil mapped in the county. This soil is deep, nearly level, and moderately well drained. It is on long, narrow strips in bottoms along permanent streams and drainageways. In places, this soil is dominantly gray at a depth below 2 feet.

Included with this soil in mapping are a few areas that are clayey below the surface layer.

Lindside silt loam is slightly acid to medium acid. It has high available water capacity and is moderately permeable.

This soil is suited to a wide range of crops. Crops respond extremely well to management. The main limitations to cultivation are short periods of flooding in some areas and an occasional high water table in winter and spring. Some areas are wet long enough to justify artificial drainage. Capability unit I–2; woodland group 2w8.

Litz Series

The Litz series consists of moderately deep, well-drained soils. These soils formed in material weathered from acid shale. Slopes range from 5 to 30 percent, but they are dominantly 5 to 20 percent.

In a representative profile the surface layer is mainly brown silt loam about 7 inches thick. The subsoil is about 7 inches thick. It is firm, yellowish-brown silty clay loam that contains numerous shale fragments. The substratum is yellowish-brown, yellowish-red, and yellow shaly silty clay loam about 16 inches thick. Soft shale fragments make up 50 percent of the substratum.

These soils have low available water capacity, moderately slow permeability, and low fertility.

About half of the acreage of these soils is in forest, and the remainder is mostly used for pasture.

Representative profile of Litz silt loam, 5 to 20 percent slopes:

A1—0 to 2 inches, very dark grayish-brown (10YR 3/2) silt loam; moderate, fine, granular structure; friable; few shale fragments; strongly acid; clear, wavy boundary.

A2—2 to 7 inches, brown (10YR 5/3) silt loam; moderate, medium and coarse, granular structure; friable; strongly acid; gradual, wavy boundary.

B—7 to 14 inches, yellowish-brown (10YR 5/6) silty clay loam; few, medium, distinct, yellowish-red (5YR 4/6) mottles; moderate, medium, angular blocky structure; about 25 percent, by volume, soft shale fragments; firm; strongly acid; gradual, wavy boundary.

C—14 to 30 inches, mottled yellowish-brown (10YR 5/6), yellowish-red (5YR 4/6), red (2.5YR 4/8), and yellow (2.5YR 7/6) shaly silty clay loam; much of the soil material occurs as coatings on shale fragments and as thin seams between layers of soft shale; about 50 percent, by volume, is shale fragments; very strongly acid.

R—30 inches +, acid shale rock.

In most cultivated areas a discontinuous or intermittent layer of strong-brown, yellowish-brown, or yellowish-red silty clay loam or silty clay is just below the Ap horizon. This layer is 5 to 10 inches thick. Reaction throughout the profile is strongly acid or very strongly acid. The amount of soft shale fragments ranges from 5 to 30 percent of the A and B horizons and from 35 to 65 percent of the C horizon. Depth to soft shale bedrock ranges from 20 to 36 inches. Depth to hard shale is as much as 8 feet in some places.

Litz silt loam, 5 to 20 percent slopes (LsD).—This soil is well drained and contains a large amount of soft shale fragments. It formed in material that weathered from acid shale. This soil has the profile described as representative for the series. Depth to soft shale rock is about 20 to 36 inches.

Included with this soil in mapping are areas where intermittent vertical seams of shale extend to the surface.

This soil is strongly acid to very strongly acid. It is moderately deep. Available water capacity is low, and permeability is moderately slow.

This soil is well suited to ryegrass and tall fescue and other plants that make much growth in spring. In most years, plant growth is slow during summer and fall. The

soil is well suited to pasture but poorly suited to row crops. Capability unit VIs–2; woodland group 3f8.

Litz silt loam, 20 to 30 percent slopes (LsE).—This well-drained soil is on the sides of ridges. It is about 20 to 30 inches deep to soft shale. The surface layer consists of brown silt loam 4 to 7 inches thick. The subsoil is yellowish-brown to yellowish-red silty clay loam mixed with shale fragments.

Included with this soil in mapping are a few severely eroded areas that have a surface layer of strong-brown or yellowish-brown silty clay loam.

This soil is strongly acid to very strongly acid, low in fertility, and low in available water capacity. Permeability is moderately slow.

This soil is poorly suited to crops, moderately well suited to poorly suited to pasture, and moderately well suited to trees. Capability unit VIs–2; woodland group 3f8.

Litz shaly silty clay loam, 5 to 20 percent slopes, severely eroded (LtD3).—This soil is mostly in tracts of 5 to 10 acres on short hillsides. It is well drained and shaly. About 50 percent of the soil material is soft shale fragments. Depth to soft shale is about 20 to 36 inches. Shallow gullies are in some areas.

Included with this soil in mapping are a few places where shale rock is at the surface.

This strongly acid soil has low available water capacity. It has moderately slow permeability and rapid runoff. The hazard of erosion is severe.

This soil is poorly suited to moderately well suited to permanent pasture. It is better suited to trees. Capability unit VIs–2; woodland group 4c3e.

Lobelville Series

The Lobelville series consists of moderately well drained, loamy soils along intermittent streams and small permanent streams. These soils formed in recent alluvium that washed from soils derived from cherty limestone. Most areas have a large amount of chert fragments throughout the soil.

In a representative profile the surface layer is dark grayish-brown cherty silt loam about 12 inches thick. Below this, to a depth of 50 inches, is pale-brown, friable cherty silt loam having grayish mottles. The number and size of mottles increase with depth.

These soils have moderate permeability and moderate available water capacity. Many areas are subject to short periods of flooding or ponding.

Most of these soils are in pasture or forest. A few areas are used for row crops.

Representative profile of Lobelville cherty silt loam:

Ap—0 to 12 inches, dark grayish-brown (10YR 4/2) cherty silt loam; weak, fine, granular structure; friable; many roots; 20 percent, by volume, chert fragments up to 3 inches across; strongly acid; clear, smooth boundary.

B—12 to 24 inches, pale-brown (10YR 6/3) cherty silt loam; few, fine, distinct, light brownish-gray (10YR 6/2) mottles; weak, fine and medium, subangular blocky structure; friable; 20 percent chert fragments, by volume; strongly acid; gradual, smooth boundary.

C—24 to 50 inches, pale-brown (10YR 6/3) cherty silt loam; common, fine and medium, distinct, light brownish-gray (10YR 6/2) mottles; massive; friable; 20 percent chert fragments, by volume; strongly acid.

Texture of each layer most commonly is silt loam, but in a few places it is loam. Reaction is strongly acid where lime has not been added. The Ap and B horizons are dark grayish brown, pale brown, yellowish brown, or brown. Depth to grayish mottles ranges from 12 to 18 inches. In some places the C horizon is mostly mottled with gray and shades of brown. The amount of chert fragments in each layer ranges from 15 to 25 percent, by volume.

Lobelville cherty silt loam (Lv).—This is the only Lobelville soil mapped in the county. This nearly level, loamy soil is deep and moderately well drained. It is in narrow bottoms along intermittent drainageways and along small permanent streams that flow from cherty limestone hills. The content of chert fragments in the soil ranges from 15 to 25 percent, by volume. Chert fragments range up to three inches across in size.

Included with this soil in mapping are a few small areas that have very few chert fragments.

This soil is strongly acid where lime has not been added. Available water capacity is moderate, and permeability is moderate. Many areas are subject to short periods of flooding or ponding. The water table rises to within 18 inches of the surface during rainy spells in winter and spring.

This soil is moderately well suited to crops that are not susceptible to damage by short periods of flooding or a seasonal high water table. Capability unit IIs–1; woodland group 2w8.

Minvale Series

The Minvale series consists of deep, well-drained soils on foot slopes and on benches at the base of cherty limestone hills. Slopes range from 5 to 20 percent.

In a representative profile the surface layer is brown cherty silt loam about 8 inches thick. The upper 5 inches of the subsoil is strong-brown, friable cherty silt loam. The lower part is yellowish-red, friable cherty silty clay loam to a depth of 75 inches.

The Minvale soils have moderately rapid permeability. Available water capacity is moderate, except where the chert content is low and the available water capacity is high. Natural fertility is low.

Most of these soils are used for pasture, hay, and row crops. Some areas are in forest.

Representative profile of Minvale cherty silt loam, 5 to 12 percent slopes:

Ap—0 to 8 inches, brown (10YR 4/3) cherty silt loam; moderate, medium, granular structure; very friable; 20 percent chert fragments, by volume; strongly acid; clear, smooth boundary.

B1—8 to 13 inches, strong-brown (7.5YR 5/6) cherty silt loam; moderate, fine and medium, subangular blocky structure; friable; 20 percent chert fragments, by volume; strongly acid; clear, smooth boundary.

B21t—13 to 19 inches, yellowish-red (5YR 4/6) cherty silty clay loam; moderate, medium, subangular blocky structure; friable; patchy clay films; 20 percent chert fragments, by volume; strongly acid; gradual, smooth boundary.

B22t—19 to 30 inches, yellowish-red (5YR 4/8) cherty silty clay loam; moderate, medium, subangular blocky structure; friable; patchy clay films; 25 percent chert fragments, by volume; strongly acid; gradual, wavy boundary.

B23t—30 to 60 inches, yellowish-red (5YR 4/8) cherty silty clay loam; moderate, medium, subangular blocky

structure; friable; patchy clay films; 25 percent, by volume, chert fragments up to 3 inches across; strongly acid; gradual, wavy boundary.

B3—60 to 75 inches, yellowish-red (5YR 4/8) cherty silty clay loam; many, fine and coarse, distinct, brownish-yellow (10YR 6/6), light yellowish-brown (10YR 6/4), and strong-brown (7.5YR 5/6) mottles; moderate, medium, subangular blocky structure; friable; patchy clay films; 35 percent, by volume, chert fragments up to 3 inches across; strongly acid.

The Ap horizon ranges in thickness from 5 to 12 inches. The B1 horizon is strong-brown, yellowish-brown, or yellowish-red silt loam or silty clay loam. The B3 horizon ranges from cherty silty clay loam to cherty clay. The amount of chert fragments in each layer ranges from 5 to 25 percent, by volume. Reaction is strongly acid or very strongly acid, except where lime has been applied.

Minvale silt loam, 5 to 12 percent slopes (MnC).—This deep, well-drained, loamy soil is in small tracts on foot slopes. The surface layer is brown, friable silt loam about 5 to 12 inches thick. The subsoil is yellowish-red, friable silty clay loam that is several feet thick. In most areas, there are a few small chert fragments on the surface and in the soil.

Included with this soil in mapping are a few small areas that have slopes of 2 to 5 percent and a few places that have slopes slightly greater than 12 percent.

This soil has a deep root zone, high available water capacity, and moderately rapid permeability. It is strongly acid where lime has not been added, and it has low natural fertility.

It is well suited to all crops commonly grown in the county. Crops respond extremely well to management. Slope is the main limitation. Capability unit IIIe–1; woodland group 3o7.

Minvale cherty silt loam, 5 to 12 percent slopes (MrC).—This deep, well-drained, loamy soil contains many small chert fragments. It is in small tracts on benches and foot slopes below cherty soils on steep uplands. The profile is the one described as representative for the series. The chert fragments range up to about 3 inches across, and comprise from 15 to 25 percent of the soil volume.

Included with this soil in mapping are a few small areas that have slopes ranging from 2 to 5 percent.

Minvale cherty silt loam is strongly acid where lime has not been added. It has a deep root zone and moderate available water capacity. Permeability is moderately rapid, and natural fertility is low.

Crops respond favorably to fertilization and management. Slope and chert fragments are the main soil limitations. Capability unit IIIe–2; woodland group 3o7.

Minvale cherty silt loam, 12 to 20 percent slopes, eroded (MrD2).—This deep, well-drained, loamy soil has many small chert fragments throughout the profile. It is on the lower parts of hillsides and on foot slopes. The surface layer is brown, friable cherty silt loam 5 to 10 inches thick. The subsoil is yellowish-red cherty silty clay loam that is several feet thick.

This soil has moderately rapid permeability. It is strongly acid or very strongly acid throughout and it has low natural fertility. It has a deep root zone and moderate available water capacity.

This soil is well suited to all crops commonly grown in the county, but slopes are too steep for frequent cultivation. Crops respond well to fertilization. Capability unit IVe–2; woodland group 3o7.

Montevallo Series

The Montevallo series consists of well-drained shaly soils in hilly areas. These soils formed in material weathered from soft, acid shale. Depth to soft shale is 1 to 3 feet. Slopes range from 5 to 30 percent.

In a representative profile the surface layer is dark grayish-brown shaly silt loam about 6 inches thick. The subsoil, light yellowish-brown shaly silt loam about 6 inches thick, has many shale fragments. The substratum is light yellowish-brown shaly silt loam about 12 inches thick, and it has many shale fragments. The amount of shale fragments increases with depth. Soft acid shale bedrock is at a depth of 24 inches.

The Montevallo soils are moderately permeable. They have very low available water capacity and low natural fertility.

About half of the acreage of Montevallo soils is in forest. The remainder is mostly in pasture.

Representative profile of Montevallo shaly silt loam, 5 to 20 percent slopes:

Ap—0 to 6 inches, dark grayish-brown (10YR 4/2) shaly silt loam; weak, medium, granular structure; friable; very strongly acid; clear, wavy boundary.

B—6 to 12 inches, light yellowish-brown (10YR 6/4) shaly silt loam; weak, fine and medium, subangular blocky structure; friable; 60 percent shale fragments, by volume; very strongly acid; gradual, wavy boundary.

C—12 to 24 inches, light yellowish-brown (10YR 6/4) shaly silt loam; 70 percent, by volume, soft acid shale that is variegated dark yellowish brown, dark red, and black; very strongly acid; gradual, wavy boundary.

R—24 inches +, soft acid shale.

The Ap horizon is brown or dark grayish brown. The B horizon is 6 to 12 inches thick, and it is light yellowish brown or yellowish brown. The amount of shale fragments in the B and C horizons ranges from about 40 to 75 percent by volume. Depth to soft acid shale ranges from 1 to 3 feet. Depth to hard shale is 6 to 8 feet or more.

Montevallo shaly silt loam, 5 to 20 percent slopes (MtD).—This well-drained, shaly soil is on hillsides, where the depth to soft acid shale is 1 to 3 feet. The profile is the one described as representative for the series.

This soil is very strongly acid, and it has low natural fertility. It has a shallow root zone and very low available water capacity. It has moderate permeability and rapid runoff.

Even under good management, this soil is only moderately suited to pasture. It is moderately suited to trees, especially pines. Capability unit VIs–2; woodland group 4d3.

Montevallo shaly silt loam, 20 to 30 percent slopes (MtE).—This soil is on highly dissected hillsides. It is well drained, shaly, and about 18 to 20 inches thick over soft acid shale. Depth to hard shale is 6 to 8 feet or more. The surface layer is brown shaly silt loam about 6 inches thick. The subsoil is yellowish-brown shaly silt loam that contains 40 to 75 percent soft acid shale fragments, by volume.

This soil has a shallow root zone and very low available water capacity. It is very strongly acid, and it has low natural fertility. Permeability is moderate, and runoff is rapid.

This soil is poorly suited to permanent pasture. Trees, especially pines, make fairly good growth on this soil. Capability unit VIIs–1; woodland group 4d3.

Newark Series

The Newark series consists of somewhat poorly drained, nearly level, loamy soils in bottoms. These soils formed in recent alluvium.

In a representative profile the surface layer is dark grayish-brown silt loam about 9 inches thick. The subsoil is mottled, grayish-brown, friable silt loam about 19 inches thick. The substratum is friable silt loam and loam mottled with shades of gray, brown, and yellow. It is about 27 inches thick.

The Newark soils are subject to flooding. They are waterlogged during wet periods, and ponding is common in many places. Permeability is moderate, and fertility is medium.

Most of these soils are used for pasture.

Representative profile of Newark silt loam:

Ap—0 to 9 inches, dark grayish-brown (10YR 4/2) silt loam; common, fine, distinct, reddish-brown streaks along root channels; moderate, medium, granular structure; friable; slightly acid; clear, smooth boundary.

B—9 to 28 inches, grayish-brown (10YR 5/2) silt loam; common, fine, distinct, reddish-brown mottles along root channels; weak, medium, granular structure; friable; slightly acid; gradual, smooth boundary.

C1—28 to 34 inches, mottled, light brownish-gray (10YR 6/2), strong-brown (7.5YR 5/6), and yellowish-brown (10YR 5/6) silt loam; massive; friable; slightly acid; clear, smooth boundary.

C2g—34 to 40 inches, light brownish-gray (10YR 6/2) loam; finely mottled with shades of brown, yellow, and red; massive; friable; slightly acid; abrupt, smooth boundary.

C3g—40 to 55 inches, grayish-brown (10YR 5/2) loam; massive; friable; slightly acid.

The Ap horizon is 6 to 12 inches thick. Reaction ranges from medium acid to neutral throughout the profile. Texture of the C2g and C3g horizons is loam, silt loam, or silty clay loam.

Newark silt loam (Ne).—This is the only Newark soil mapped in the county. This loamy soil is somewhat poorly drained and nearly level and is in bottoms.

This soil is medium acid to neutral, and it has medium natural fertility. It is waterlogged during wet periods, and ponding is common in many places. Most areas are subject to flooding.

If the soil is drained, row crops can be grown year after year. Suitable crops include summer annuals, such as corn. Without drainage, the soil can be used for water-tolerant crops and crops that can be planted late in the season, such as soybeans. Capability unit IIw–1; woodland group 2w8.

Rock Land

Rock land (Ro) is a miscellaneous land type consisting of areas that are more than 50 percent rock outcrop. The rocks generally protrude a foot or two above the soil and they are separated by narrow strips of shallow, fine-textured soil. The rocks are predominantly limestone, but a few are shale and sandstone. Slopes range from 5 to about 45 percent.

Most areas of Rock land support thin stands of red-cedar, hickory, hackberry, gum, and Virginia pine. Capability unit VIIs–1; woodland group not assigned.

Sequoia Series

The Sequoia series consists of moderately deep, well-drained soils that formed in material weathered from acid shale. They are on low rolling hills. Slopes are dominantly 2 to 12 percent.

In a representative profile the surface layer is brown silt loam about 7 inches thick. The subsoil is yellowish-red, firm silty clay that extends to soft shale rock at a depth of 34 inches.

The Sequoia soils have moderately slow permeability and low fertility. Available water capacity is low for the more shallow soils and moderate for the deeper Sequoia soils.

Most of these soils are used for pasture.

Representative profile of Sequoia silt loam, 5 to 12 percent slopes, eroded:

Ap—0 to 7 inches, brown (10YR 5/3) silt loam; strong, medium, granular structure; friable; strongly acid; clear, wavy boundary.

B21t—7 to 16 inches, yellowish-red (5YR 5/6) silty clay; strong, medium and coarse, angular blocky structure; firm; thick, continuous clay films; strongly acid; gradual, wavy boundary.

B22t—16 to 30 inches, yellowish-red (5YR 5/6) silty clay; few, fine, distinct, dark-red (10YR 3/6) and yellowish-brown (10YR 5/6) mottles; strong, medium and coarse, angular blocky structure; firm; thick, continuous clay films; strongly acid; gradual, wavy boundary.

B3t—30 to 34 inches, yellowish-red (5YR 5/6) silty clay; few, medium, distinct, brown (7.5YR 5/4) mottles and common, medium, distinct, pale-brown (10YR 6/3) mottles; common, soft shale fragments; moderate, medium, angular blocky structure; firm; thick clay films; strongly acid; gradual, wavy boundary.

R—34 to 55 inches, soft acid shale that is variegated red, brown, gray, and yellow; few seams and coatings of red and reddish-yellow soil material.

The Ap horizon is 4 to 8 inches thick, and it is brown, strong brown, or yellowish red. Texture of the Ap horizon is silt loam or silty clay. The B horizon is strong brown, yellowish red, or red. Reaction is strongly acid or very strongly acid, except where the surface layer has been limed. Depth to soft acid shale ranges from 20 to 50 inches. Depth to hard shale is 4 to 10 feet.

Sequoia silt loam, 2 to 5 percent slopes, eroded (SeB2).—This soil is on the smooth tops of low rolling hills. It is well drained, and it is 20 to 50 inches deep to soft acid shale bedrock. The surface layer is brown silt loam 5 to 8 inches thick. The subsoil is yellowish-red silty clay that extends to bedrock. Fragments of soft shale are commonly in the lower part of the subsoil.

Included with this soil in mapping are some areas that are eroded. These areas have a surface layer of yellowish-red silty clay loam.

This soil is strongly acid or very strongly acid where lime has not been added, and it has low natural fertility. It has a moderately deep root zone, moderate available water capacity, and moderately slow permeability.

This soil is moderately suited to row crops. It is well suited to permanent pasture plants and to small grains. Capability unit IIIe–4; woodland group 3o7.

Sequoia silt loam, 5 to 12 percent slopes, eroded (SeC2).—This rolling soil is on low hills. It is a well-drained soil that is about 35 inches thick over soft shale. The profile is the one described as representative for the series. The surface layer is 4 to 8 inches thick.

Included with this soil in mapping are small spots that have a surface layer of reddish silty clay loam or silty clay.

This soil is strongly acid or very strongly acid, except where lime has been added. It has moderate available water capacity, moderately slow permeability, and low natural fertility.

Crops respond moderately well to management. Crops that make a large growth in spring and early summer, when moisture is plentiful, are well suited to this soil. Examples are small grains and tall fescue. Capability unit IVe–3; woodland group 3o7.

Sequoia silty clay, 5 to 12 percent slopes, severely eroded (SkC3).—This soil is in areas on hills underlain by soft acid shale. It is a well-drained, rolling, clayey soil. The surface layer is strong-brown or yellowish-red silty clay. It is generally cloddy and has poor tilth. The subsoil is yellowish-red to red silty clay. Depth to soft acid shale ranges from 20 to 40 inches.

This soil is strongly acid or very strongly acid, and it has low natural fertility. It has low available water capacity, and moderately slow permeability. Runoff is rapid, and the soil is droughty.

This soil is moderately well suited to pasture and poorly suited to cultivated crops. Capability unit VIe–2; woodland group 4c3e.

Shouns Series

The Shouns series consists of deep, well-drained, loamy soils on foot slopes and benches at the base of shale and sandstone ridges (fig. 13). Slopes range from 5 to 20 percent.

In a representative profile the surface layer is brown silt loam about 8 inches thick. The upper 4 inches of the subsoil is reddish-brown, friable silt loam. The rest is yellowish-red, friable silty clay loam to a depth of 60 inches or more.

These soils have moderate permeability and low fertility. Available water capacity is high, but due to rapid surface water runoff the steeper, severely eroded soils tend to be slightly droughty.

Figure 13.—**A field of deep, loamy, well-drained Shouns soils on foot slopes at the base of high ridges. Wooded Lehew soils are on the ridges.**

A large part of the acreage is used for pasture, but many areas are in forest.

Representative profile of Shouns silt loam, 5 to 12 percent slopes:

Ap—0 to 8 inches, brown (7.5YR 5/4) silt loam; weak, fine, granular structure; friable; strongly acid; clear, smooth boundary.

B1—8 to 12 inches, reddish-brown (5YR 4/4) silt loam; moderate, fine, subangular blocky structure; friable; strongly acid; clear, smooth boundary.

B21t—12 to 20 inches, yellowish-red (5YR 4/6) silty clay loam; moderate, fine and medium, subangular blocky structure; friable; thin, continuous clay films; few, fine shale fragments; strongly acid; gradual, smooth boundary.

B22t—20 to 44 inches, yellowish-red (5YR 4/6) silty clay loam; moderate, medium, subangular blocky structure; friable; thin, continuous clay films; common, small shale fragments; strongly acid; gradual, smooth boundary.

B23t—44 to 60 inches, yellowish-red (5YR 4/6) silty clay loam; few, fine, distinct, strong-brown mottles; moderate, medium, subangular blocky structure; friable; patchy clay films; few, small shale fragments; strongly acid.

The Ap horizon is 4 to 10 inches thick. It is reddish brown, brown, or yellowish red and ranges from silt loam to silty clay loam. The B horizon is yellowish red, reddish brown, or, rarely, strong brown. Texture of the B horizon is silty clay loam, silt loam, loam, or clay loam. The amount of shale, siltstone, or fine-grained sandstone fragments in the B horizon ranges from about 2 percent to 20 percent, by volume. Reaction of each horizon is strongly acid, except the surface layer is less acid where lime has been added.

Shouns silt loam, 5 to 12 percent slopes (SnC).—This loamy soil is deep and well drained. It most commonly is on foot slopes or benches below shale and sandstone ridges. The profile is the one described as representative for the series.

Included with this soil in mapping are a few areas that have less than 5 percent slopes.

Shouns silt loam has a deep root zone, high available water capacity, and moderate permeability. It is low in natural fertility, and it is strongly acid, except where lime has been added.

This soil is well suited to the crops commonly grown in the county. Crops respond extremely well to lime and fertilizer. Slope is the main limitation in using this soil. Capability unit IIIe–1; woodland group 3o7.

Shouns silt loam, 12 to 20 percent slopes, eroded (SnD2).—This soil is in narrow strips along the lower parts of hillsides. It is loamy, deep, and well drained. The surface layer is brown, friable silt loam 5 to 8 inches thick. The subsoil is yellowish-red or reddish-brown, friable silty clay loam. In most areas, a few small fragments of reddish shale or siltstone are in the soil.

The root zone is deep, permeability is moderate, and available water capacity is high. The soil is strongly acid and low in fertility.

The crops commonly grown in the county grow well on this soil, but it is too steep for frequent cultivation. Crops respond very well to lime and fertilizer. Capability unit IVe–1; woodland group 3o7.

Shouns silty clay loam, 10 to 20 percent slopes, severely eroded (SoD3).—This soil is in small tracts on

foothills below prominent ridges. It is a deep, well-drained, loamy soil. The surface layer, mostly former subsoil material, is yellowish-red, friable silty clay loam about 6 inches thick. The subsoil is similar in color and texture. A few small fragments of shale, siltstone, and sandstone are on the surface and in the soil. These fragments do not interfere with the use of the soil.

Included with this soil in mapping are a few areas that have some shallow gullies.

This soil has a deep root zone, moderate permeability, and high available water capacity. The soil is strongly acid, and low in fertility.

This soil is fair for growing row crops in long cropping systems, but it is well suited to pasture, hay, and small grains. Crops give good response to management. Capability unit IVe–1; woodland group 4c3e.

Staser Series, Coarse Subsoil Variant

The Staser series, coarse subsoil variant, consists of deep, well-drained, loamy, nearly level soils in first bottoms. These soils are mainly along the Tennessee River.

In a representative profile the soil is dark-colored, friable loam and fine sandy loam to a depth of about 60 inches.

The Staser soils have high available water capacity, moderately rapid permeability, and high fertility.

These soils are used for row crops, hay, and pasture.

Representative profile of Staser fine sandy loam, coarse subsoil variant:

Ap—0 to 8 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; moderate, fine, granular structure; very friable; common mica flakes; slightly acid; clear, smooth boundary.

A11—8 to 18 inches, very dark brown (10YR 2/2) loam; moderate, fine, granular structure; friable; common mica flakes; slightly acid; gradual, smooth boundary.

A12—18 to 26 inches, very dark grayish-brown (10YR 3/2) fine sandy loam; moderate, fine, granular structure; friable; common mica flakes; slightly acid; gradual, smooth boundary.

C1—26 to 32 inches, dark-brown (10YR 3/3) fine sandy loam; weak, fine to coarse, subangular blocky structure; friable; common mica flakes; slightly acid; gradual, smooth boundary.

C2—32 to 60 inches, dark yellowish-brown (10YR 3/4) fine sandy loam; massive; friable; many mica flakes; medium acid; gradual, smooth boundary.

The Ap horizon ranges from 6 to 12 inches in thickness. Color of the A11, A12, and C1 horizons is very dark brown, very dark grayish brown, or dark brown. The C2 horizon is dark yellowish brown, dark brown, or very dark grayish brown. Texture of the A and C horizons is loam, fine sandy loam, or very fine sandy loam. Reaction of each horizon is medium acid to neutral.

Staser fine sandy loam, coarse subsoil variant (St).—This is the only Staser soil mapped in the county. This soil is in first bottoms along the Tennessee River. It is deep, well drained, and nearly level.

Included with this soil in mapping are a few areas of sandy soils that are droughty.

This soil is high in natural fertility, and crops do not require additions of lime. The available water capacity is high.

This soil is well suited to row crops and pasture plants. Capability unit I–1; woodland group 2o7.

Talbott Series

The Talbott series consists of well-drained soils on uplands underlain by limestone (fig. 14). Depth to bedrock is 2 to 5 feet. Slopes range from 5 to 20 percent.

In a representative profile the surface layer is dark yellowish-brown silt loam about 5 inches thick. The subsoil is dominantly yellowish-red, very firm, plastic clay. Limestone bedrock is at a depth of 42 inches.

The Talbott soils have moderately slow permeability and low natural fertility. Available water capacity generally is moderate. Where the soils are severely eroded or shallow, available water capacity is low.

These soils are mostly in pasture and forest.

Representative profile of Talbott silt loam, 5 to 12 percent slopes, eroded:

Ap—0 to 5 inches, dark yellowish-brown (10YR 4/4) silt loam; moderate, medium, granular structure; friable; medium acid; clear, wavy boundary.

B1t—5 to 8 inches, yellowish-red (5YR 4/6) silty clay loam; moderate, medium, subangular blocky structure; firm; patchy clay films; medium acid; gradual, wavy boundary.

B21t—8 to 23 inches, yellowish-red (5YR 4/6) clay; strong, medium, angular blocky structure; very firm; plastic; thick and continuous clay films; strongly acid; gradual, wavy boundary.

B22t—23 to 33 inches, yellowish-red (5YR 4/8) clay; many, coarse, distinct, strong-brown (7.5YR 5/6) mottles; strong, fine, angular blocky structure; very firm; plastic; continuous clay films; strongly acid; gradual, wavy boundary.

B23t—33 to 42 inches, yellowish-brown (10YR 5/6) clay; few, fine, distinct, strong-brown mottles; strong, fine, angular blocky structure; very firm; plastic; thick and continuous clay films; few black concretions and stains; slightly acid.

R—42 inches +, limestone bedrock.

The Ap horizon is strongly acid to medium acid. It is dark yellowish-brown, yellowish-brown, brown, or yellowish-red silt loam to silty clay and ranges from 4 to 8 inches in thickness. The B21t and B22t horizons range from yellowish red to strong brown. The B23t layer is neutral to strongly acid, and it ranges from yellowish brown to light olive brown. Depth to limestone bedrock ranges from 2 to 5 feet.

Figure 14.—**Talbott soils used for pasture at the base of a ridge occupied by steep, wooded Lehew soils. In places limestone bedrock is exposed in the area along the fence row.**

478-383—74——3

Talbott silt loam, 2 to 5 percent slopes (TaB).—This well-drained soil ranges from 2 to 5 feet thick over limestone rock. The surface layer is brown or dark yellowish-brown silt loam 4 to 8 inches thick. The subsoil is yellowish-red plastic clay.

Included with this soil in mapping are a few places that have chert fragments on the surface, and several areas of exposed bedrock.

This soil is low in natural fertility, and it is strongly acid, except near bedrock and in the surface layer where lime has been added. It has medium available water capacity and moderately slow permeability.

This soil is poorly suited to summer annuals and to most row crops. It is suited to small grains, hay, and pasture. Capability unit IIIe–4; woodland group 3c2.

Talbott silt loam, 5 to 12 percent slopes, eroded (TaC2).—This rolling, well-drained soil is on low hills. It is underlain by limestone. The profile is the one described as representative for the series. Limestone bedrock is generally at a depth of 2 to 5 feet, but outcrops of rock are common.

Included with this soil in mapping are areas or spots that contain yellowish-red plastic clay in the surface layer.

This soil has low natural fertility and low available water capacity. The heavy plastic clay of the subsoil restricts the penetration of plant roots. Permeability is moderately slow, and runoff is rapid. The hazard of erosion is severe where cultivated crops are grown. This soil is poorly suited to most of the row crops commonly grown in the county. Pasture and close-growing crops are moderately well suited. Capability unit IVe–3; woodland group 3c2.

Talbott silt loam, 12 to 20 percent slopes, eroded (TaD2).—This well-drained soil is in small tracts on short hillsides. The surface layer is yellowish-brown silt loam about 4 to 6 inches thick. In many places the surface layer contains some clay from the subsoil. The subsoil is yellowish-red plastic clay in the upper part. The lower part is yellowish-brown or light olive-brown clay that is streaked with brown, red, and black. Depth to limestone bedrock is generally 2 to 4 feet.

Included with this soil in mapping are a few areas of exposed bedrock.

This soil is low in natural fertility. It is strongly acid, except in the surface layer where lime has been added and in the layer immediately above bedrock where the reaction is neutral. Available water capacity is low, and permeability is moderate. Runoff is rapid, and the hazard of erosion is severe where cultivated crops are grown. Capability unit VIe–2; woodland group 3c2.

Talbott silty clay, 5 to 20 percent slopes, severely eroded (TcD3).—This soil is clayey and well drained. The surface layer is yellowish-red silty clay 4 to 6 inches thick. It mainly consists of yellowish-red, firm, plastic clay from the subsoil.

Included with this soil in mapping are some areas where shallow gullies are common and many areas where rock is exposed.

This soil has low natural fertility and low available water capacity. Permeability is moderately slow. Runoff is rapid, and the hazard of erosion is severe. This soil has poor tilth.

Cultivated crops are poorly suited. The soil is moderately well suited to pasture, if lime and fertilizer are added and the pasture is protected from overgrazing. Capability unit VIe–2; woodland group 4c3e.

Talbott-Rock outcrop complex, 5 to 20 percent slopes (TkD).—This complex consists of areas where limestone outcrops cover 10 to 40 percent of the surface. The soil between outcrops ranges from a few inches to several feet in thickness, and has a surface layer of brown silt loam or silty clay loam about 3 to 5 inches thick. The subsoil is yellowish-red, very firm, plastic clay.

Some areas are moderately well suited to permanent pasture, but most areas are better suited to trees. About 75 percent of the acreage is wooded. The trees are mainly redcedar, Virginia pine, hickory, and elm. On most of the open land it is impractical to operate farm machinery. Capability unit VIs–2; woodland group 4x3.

Tarklin Series

The Tarklin series consists of moderately well drained soils that have a fragipan at a depth of about 2 feet. These soils are in small areas on fans or benches at the base of cherty limestone hills. Slopes range from 2 to 12 percent.

In a representative profile the surface layer is brown silt loam about 8 inches thick. The upper part of the subsoil is 6 inches of yellowish-brown, friable silt loam that has few chert fragments. The middle part is a fragipan of firm and brittle cherty silty clay loam mottled with yellowish brown about 24 inches thick. The lower part is firm, yellowish-brown cherty silty clay loam that is mottled.

The Tarklin soils have slow permeability and moderate to low available water capacity. These soils are low in natural fertility. The fragipan, at a depth of 2 feet, restricts root development and the movement of air and water.

These soils are used mostly for pasture. Some areas are in pine forest.

Representative profile of Tarklin silt loam, 2 to 8 percent slopes:

Ap—0 to 8 inches, brown (10YR 5/3) silt loam; weak, fine, granular structure; friable; strongly acid; clear, smooth boundary.

B2t—8 to 24 inches, yellowish-brown (10YR 5/6) silt loam; moderate, medium, subangular blocky structure; friable; thin, patchy clay films; few, fine, manganese concretions; few, fine, chert fragments; very strongly acid; clear, wavy boundary.

Bx—24 to 48 inches, yellowish-brown (10YR 5/4) cherty silty clay loam; common, medium, distinct, light brownish-gray (10YR 6/2) and strong-brown (7.5YR 5/6) mottles; moderate, medium, angular blocky structure; firm and brittle; 25 percent, by volume, chert fragments up to 3 inches across; clay films are on the face of gravel and peds; very strongly acid; gradual, irregular boundary.

B3t—48 to 60 inches, yellowish-brown (10YR 5/6) cherty silty clay loam; few, medium, distinct, light brownish-gray mottles; weak, fine, blocky structure; firm; clay films on faces of peds; 30 percent, by volume, ¼- to 1½-inch chert fragments; very strongly acid.

The Ap horizon ranges from 4 to 10 inches in thickness. The B2t horizon ranges from yellowish brown to strong brown. The Bx horizon ranges in thickness from 1 to 3 feet. Content of chert fragments in each horizon ranges from 2 to 30 percent, by volume. Reaction of each horizon is strongly acid or very strongly acid, except the surface layer is less acid where lime has been added.

Tarklin cherty silt loam, 2 to 5 percent slopes (TnB).—This soil is in small tracts on foot slopes and on benches below hillsides. It is moderately well drained and has a fragipan about 2 feet below the surface. The surface layer is brown cherty silt loam 5 to 10 inches thick. The upper part of the subsoil is yellowish-brown cherty silt loam about 16 inches thick. The lower part is cherty silty clay loam fragipan about 1 to 2 feet thick mottled with gray and brown. Chert fragments are mostly less than 2 inches in size, and make up 15 to 30 percent of the soil volume.

Included with this soil is mapping are a few areas that have gray mottles above the fragipan and a few small areas where slopes are 0 to 2 percent.

This soil has a moderately deep root zone and low available water capacity. It is strongly acid or very strongly acid, except in the surface layer where lime has been added. Natural fertility is low. This soil is friable and moderately permeable above the fragipan. The fragipan is slowly permeable to air and water, and it is a barrier to root penetration.

If well managed, this soil is moderately well suited to the crops commonly grown in the county. Capability unit IIe–2; woodland group 3o7.

Tarklin cherty silt loam, 5 to 12 percent slopes (TnC).—This soil is in tracts of 2 to 5 acres on fans and benches below cherty hillsides. It is a moderately well drained soil that has a fragipan. The surface layer consists of brown cherty silt loam 4 to 8 inches thick. The subsoil is 16 inches of yellowish-brown cherty silt loam, underlain at an average depth of 2 feet by a fragipan mottled with yellowish brown.

This soil is low in natural fertility. It is strongly acid or very strongly acid, except in the surface layer where lime has been added. Available water capacity is low, and permeability is slow.

The cherty surface interferes with, but does not prevent, cultivation. Limited root depth and availability of moisture are the main limitations to use of this soil. Capability unit IIIe–3; woodland group 3o7.

Tarklin silt loam, 2 to 8 percent slopes (TlB).—This soil is in tracts of 2 to 5 acres on foot slopes below hills. It is a moderately well drained, loamy soil that has a fragipan at a depth of 2 feet. The profile is the one described as representative for the series.

This soil is strongly acid or very strongly acid, except in the surface layer where lime has been added. Natural fertility is low, and the root zone is limited largely to the soil above the fragipan. Available water capacity is moderate, and permeability is slow. This soil is generally easy to work, but it dries out slower than well-drained soils. Planting dates are sometimes delayed because of wetness.

This soil is moderately well suited to the crops commonly grown in the county. Capability unit IIe–2; woodland group 3o7.

Teas Series

The Teas series consists of well-drained, reddish, loamy soils high on the tops of hills and ridges. These soils formed in material weathered from reddish siltstone and shale. Slopes range from 5 to 40 percent, but they are dominantly 20 to 40 percent.

In a representative profile the surface layer is reddish-brown silt loam about 6 inches thick. The subsoil is reddish-brown shaly silt loam about 24 inches thick. Bedrock is at a depth of 30 inches. The upper few inches of bedrock is partly softened and contains thin seams of soil material.

The Teas soils have low available water capacity, low natural fertility, and moderate permeability.

Most areas are in forest.

Representative profile of Teas silt loam, 20 to 40 percent slopes:

A1—0 to ½ inch, very dark grayish-brown (10YR 3/2) silt loam; weak, fine, granular structure; very friable; abrupt, smooth boundary.

A2—½ to 6 inches, reddish-brown (5YR 4/3) silt loam; moderate, medium, granular structure; very friable; many roots; 15 percent, by volume, shale fragments; strongly acid; clear, smooth boundary.

B21—6 to 22 inches, reddish-brown (5YR 4/3) shaly silt loam; weak, medium and fine, subangular blocky structure; friable; many roots; 35 percent, by volume, weak-red shale fragments up to 6 inches long and 2 inches thick; strongly acid; gradual, irregular boundary.

B22—22 to 30 inches, reddish-brown (2.5YR 4/4) shaly silt loam; weak, medium and fine, subangular blocky structure; friable; common roots; 40 percent, by volume, weak-red shale fragments; strongly acid; clear, wavy boundary.

R—30 to 36 inches, soft and hard, dark reddish-gray and weak-red shale; 10 percent, by volume, reddish silt loam material in cracks between rocks.

The A2 horizon ranges from 4 to 8 inches in thickness. Content of reddish shale fragments in the B horizon ranges from 35 to 50 percent, by volume. Depth to bedrock ranges from 20 to 36 inches.

Teas silt loam, 5 to 20 percent slopes (TsD).—This well-drained soil is on high hills and ridges. It is a reddish, loamy soil that is about 30 inches deep to reddish shale rock. The surface layer is reddish-brown silt loam about 4 to 8 inches thick. The subsoil is reddish-brown shaly silt loam that contains 35 to 50 percent reddish shale fragments.

This soil is strongly acid and low in natural fertility. Available water capacity is low.

This soil is moderately well suited to pasture. It is well suited to trees, and most of the acreage is in forest. Capability unit VIs–2; woodland group 4f3.

Teas silt loam, 20 to 40 percent slopes (TsE).—This reddish, well-drained, loamy soil is on steep, highly dissected shale ridges. Depth to reddish shale bedrock ranges from 20 to 36 inches. The profile is the one described as representative for the series.

The soil is strongly acid and low in natural fertility. It has low available water capacity.

The less steep areas of this soil are moderately suited to pasture. This soil is well suited to trees, and most areas are in forest. Capability unit VIIs–1; woodland group 4f3.

Waynesboro Series

The Waynesboro series consists of deep, well-drained soils that formed in old alluvium. Most areas are 30 to 200 feet above the present flood plains on high terraces along major streams. Slopes range from 5 to 30 percent.

In a representative profile the surface layer is brown loam about 11 inches thick. The upper part of the subsoil

is yellowish-red and red, friable clay loam about 19 inches thick. The lower part of the subsoil is dark-red, friable clay about 42 inches thick.

The Waynesboro soils have moderate permeability and low natural fertility. Available water capacity is high, except where the soils are gravelly or eroded it is moderate.

These soils are mainly used for pasture, several acres are in forest, and a few areas are row cropped.

Representative profile of Waynesboro loam, 5 to 12 percent slopes:

Ap—0 to 7 inches, brown (10YR 4/3) loam; moderate, fine and medium, granular structure; very friable; strongly acid; clear, smooth boundary.

A3—7 to 11 inches, brown (7.5YR 4/4) loam; moderate, medium, granular structure; friable; strongly acid; clear, smooth boundary.

B1—11 to 18 inches, yellowish-red (5YR 4/6) clay loam; moderate, fine, subangular blocky structure; friable; strongly acid; gradual, smooth boundary.

B21t—18 to 30 inches, red (2.5YR 4/6) clay loam; moderate, medium, subangular blocky structure; friable; thin, patchy clay films; strongly acid; gradual, smooth boundary.

B22t—30 to 50 inches, dark-red (2.5YR 3/6) clay; moderate, medium, subangular blocky structure; friable; thick, continuous clay films; strongly acid; gradual, smooth boundary.

B23t—50 to 72 inches, dark-red (2.5YR 3/6) clay; few, medium, distinct, strong-brown (7.5YR 5/6) mottles; moderate, medium, subangular blocky structure; friable; thick, continuous clay films; strongly acid.

The Ap horizon is 4 to 10 inches thick. It is generally brown, and it is red or yellowish red in severely eroded areas. Texture of the Ap horizon is loam or clay loam. Texture of the B21t horizon is clay loam, sandy clay, or clay, and that of the B22t and B23t horizons is clay or sandy clay. Color of the B1 horizon is red or yellowish red. Color of the B21t horizon is red, yellowish red, or dark red. The amount of rounded gravel on the surface and in the soil ranges from 0 to 25 percent. This soil is strongly acid or very strongly acid, except in the surface layer where lime has been added.

Waynesboro loam, 5 to 12 percent slopes (WaC).—This deep, well-drained soil is mostly in 2- to 5-acre tracts on the broad tops of low hills. The profile is the one described as representative for the series.

Included with this soil in mapping are a few areas that have slopes of less than 5 percent.

This soil has a deep root zone and high available water capacity. It is moderately permeable. It is strongly acid or very strongly acid, except where lime has been added, and it is low in natural fertility.

This soil is easy to work, and crops respond extremely well to management. All commonly grown crops are well suited and are productive under good management. Capability unit IIIe–1; woodland group 3o7.

Waynesboro loam, 12 to 20 percent slopes (WaD).—This deep, well-drained soil is in small areas on the sides of low-lying hills. The surface layer is brown loam about 4 to 8 inches thick. The subsoil is yellowish-red clay loam in the upper part and dark-red clay in the lower part.

Included with this soil in mapping are a few areas that have a yellowish-red clay loam surface layer.

This soil is low in natural fertility. It is strongly acid or very strongly acid, except where lime has been added. It has high available water capacity and moderate permeability.

This soil is suited to all crops commonly grown in the county. Capability unit IVe–1; woodland group 3o7.

Waynesboro gravelly loam, 5 to 12 percent slopes (WgC).—This rolling soil is on hills. It is a deep, well-drained soil that has many rounded pebbles on the surface and in the soil. The surface layer ranges from 4 to 8 inches in thickness and is brown gravelly loam. The subsoil is yellowish-red gravelly clay loam in the upper part and dark-red gravelly clay in the lower part. Content of rounded gravel in the soil ranges from 15 to 25 percent, by volume.

This soil is strongly acid or very strongly acid where lime has not been added, and it is low in natural fertility. It has moderate available water capacity and moderate permeability.

It is moderately well suited to row crops and moderately well to well suited to pasture. Capability unit IIIe–2; woodland group 3o7.

Waynesboro gravelly loam, 12 to 20 percent slopes (WgD).—This deep, well-drained soil is on short hillsides. The surface layer is brown gravelly loam. The subsoil is yellowish-red gravelly clay loam in the upper part and dark-red gravelly clay in the lower part. Content of rounded gravel ranges from 15 to 25 percent, by volume.

This soil has a deep root zone and moderate available water capacity. The soil is strongly acid and low in natural fertility. Permeability is moderate.

Row crops are moderately well suited, but they can be grown only in long cropping systems because of the strong slope. Small grains, hay, and pasture are moderately well to well suited. Capability unit IVe–2; woodland group 3o7.

Waynesboro gravelly loam, 20 to 30 percent slopes (WgE).—This soil is deep and well drained, and it is on short hillsides. The surface layer is brown gravelly loam about 4 to 8 inches thick. The subsoil is yellowish-red gravelly clay loam in the upper part and dark-red gravelly clay in the lower part. Rounded pebbles, up to 3 inches across, makes up 15 to 25 percent of the soil volume.

The thick, moderately permeable subsoil has a deep root zone. This soil has moderate available water capacity, and it is strongly acid or very strongly acid throughout.

Plants give a moderate response to fertilizer and other good management. The steep slopes and gravel content are the main limitations to use of this soil. Capability unit VIe–1; woodland group 3r8.

Waynesboro clay loam, 5 to 20 percent slopes, eroded (WhD2).—This well-drained soil is in small tracts on high terraces. The surface layer is yellowish-red or red clay loam that is largely subsoil material. The subsoil is red clay loam in the upper part and dark-red clay in the lower part.

Included with this soil in mapping are many areas where the surface layer is strong-brown or brown loam.

This soil is strongly acid or very strongly acid, and it is low in natural fertility. It has moderate available water capacity and is moderately permeable. It has poor tilth and is difficult to work because of the clay loam surface layer.

This soil is well suited to pasture, hay, and trees. It responds well to lime and fertilizer. Slope and the hazard of erosion are the main limitations to use of this soil. Capability unit IVe–1; woodland group 4c3e.

Waynesboro gravelly clay loam, 5 to 20 percent slopes, eroded (WkD2).—This soil is deep and well drained, and it is on short hillsides. The surface layer, mostly subsoil material, is brown to red gravelly clay loam from 4 to 6 inches thick. The subsoil is yellowish-red gravelly clay loam in the upper part and dark-red gravelly clay in the lower part. Rounded gravel, up to 3 inches across, makes up 15 to 25 percent of the soil volume.

Included with this soil in mapping are a few areas that have some shallow and deep gullies.

The subsoil is moderately permeable, and it has a deep root zone. Available water capacity is moderate. The soil is low in natural fertility and strongly acid or very strongly acid.

This soil is suited to pasture. It is also suited to crops, such as small grains, that make a large growth during spring when moisture is plentiful. Capability unit IVe–2; woodland group 4c3e.

Whitwell Series

The Whitwell series consists of nearly level, gently sloping, moderately well drained, loamy soils on low stream terraces. Slopes range from 0 to 5 percent.

In a representative profile the surface layer is brown loam about 8 inches thick. The subsoil, to a depth of 52 inches, is brown and yellowish-brown, friable loam mottled in the lower part with shades of gray and brown. The substratum is brown gravelly sandy loam.

The Whitwell soils have moderate permeability and high available water capacity. They are medium in natural fertility and are strongly acid throughout.

These soils are used mostly for pasture, and a few areas are used for row crops.

Representative profile of Whitwell loam:

Ap—0 to 8 inches, brown (10YR 4/3) loam; weak, fine and medium, granular structure; very friable; many roots; strongly acid; clear, smooth boundary.

B1—8 to 12 inches, yellowish-brown (10YR 5/4) loam; weak, medium, subangular blocky structure; friable; many roots; strongly acid; clear, smooth boundary.

B21t—12 to 20 inches, brown (7.5YR 4/4) loam; weak, medium, subangular blocky structure; friable; thin, patchy clay films; common roots; strongly acid; gradual, smooth boundary.

B22t—20 to 30 inches, brown (7.5YR 4/4) loam; common, medium, distinct, light brownish-gray (10YR 6/2) mottles; few, very dark grayish-brown (10YR 3/2) stains; weak, medium, subangular blocky structure; friable; thin, patchy clay films; few roots; strongly acid; gradual, smooth boundary.

B3—30 to 52 inches, dark yellowish-brown (10YR 4/4) loam; many, medium and coarse, distinct, light brownish-gray (10YR 6/2) mottles; few, very dark grayish-brown (10YR 3/2) stains; weak, medium, subangular blocky structure; friable; few, fine, black concretions; very few, thin, patchy clay films; strongly acid; gradual, smooth boundary.

C—52 to 60 inches, brown (10YR 5/3) gravelly sandy loam; structureless; friable; strongly acid.

Texture of the B horizon is loam or clay loam. Gray mottles appear at depths ranging from 18 to 24 inches below the surface. In places there is a seasonal water table at a depth of about 24 inches. The C horizon is loam, sandy loam, or clay loam that contains few to many pebbles.

Whitwell loam, 0 to 5 percent slopes (WtB).—This is the only Whitwell soil mapped in the county. It is a deep, loamy, moderately well drained soil on low terraces. Slopes are dominantly 0 to 2 percent, but range from 0 to 5 percent.

This soil is strongly acid throughout, and it has high available water capacity. In places surface water is a problem.

Where this soil is drained, most of the crops commonly grown are well suited. Alfalfa is less well suited than other crops. Capability unit I–2; woodland group 2w8.

Wolftever Series

The Wolftever series consists of moderately well drained soils on low stream terraces. Slopes range from 1 to 12 percent.

In a representative profile the surface layer is brown silt loam about 8 inches thick. The subsoil is brown, firm silty clay loam to a depth of about 66 inches. It is mottled with shades of gray and brown at a depth of 16 inches.

The Wolftever soils have moderately slow permeability and high available water capacity. Reaction is strongly acid throughout, and natural fertility is medium.

These soils are used for row crops, hay, and pasture.

Representative profile of Wolftever silt loam, 1 to 5 percent slopes:

Ap—0 to 8 inches, brown (10YR 4/3) silt loam; moderate, medium, granular structure; friable; strongly acid; clear, smooth boundary.

B21t—8 to 16 inches, brown (7.5YR 4/4) silty clay loam; moderate, fine and medium, subangular blocky structure; firm; thin, patchy clay films; strongly acid; clear, smooth boundary.

B22t—16 to 35 inches, brown (7.5YR 4/4) silty clay loam; few, fine, distinct, light brownish-gray mottles; moderate, medium, subangular blocky structure; firm; thin, patchy clay films; strongly acid; gradual, smooth boundary.

B23t—35 to 46 inches, brown (7.5YR 4/4) silty clay loam; common, medium, distinct, light brownish-gray (10YR 6/2) mottles; moderate, medium, subangular blocky structure; firm; thin, patchy clay films; strongly acid; gradual, smooth boundary.

B3—46 to 66 inches, brown (7.5YR 4/4) silty clay loam; common, medium, distinct, light brownish-gray (10YR 6/2) and light yellowish-brown (10YR 6/4) mottles; weak, medium, subangular blocky structure; firm; strongly acid.

The Ap horizon ranges from 4 to 10 inches in thickness. Color of the B horizon is brown, yellowish brown, or strong brown. Grayish mottles appear at depths ranging from 16 to 25 inches below the surface.

Wolftever silt loam, 1 to 5 percent slopes (WvB).—This deep, moderately well drained soil is on low terraces. It has the profile described as representative for the series.

This soil has moderate natural fertility and is strongly acid throughout. Available water capacity is high.

This soil is suited to all commonly grown crops, except alfalfa and tobacco (fig. 15). Capability unit IIe–2; woodland group 3w8.

Wolftever silt loam, 5 to 12 percent slopes, eroded (WvC2).—This moderately well drained soil occupies very short side slopes that lead from first bottoms up to low terraces. The surface layer is brown silt loam about 4 to 6 inches thick. The subsoil is brown silty clay loam mottled with gray at a depth of 16 to 25 inches.

Included with this soil in mapping are a few places where the surface layer is brown silty clay loam.

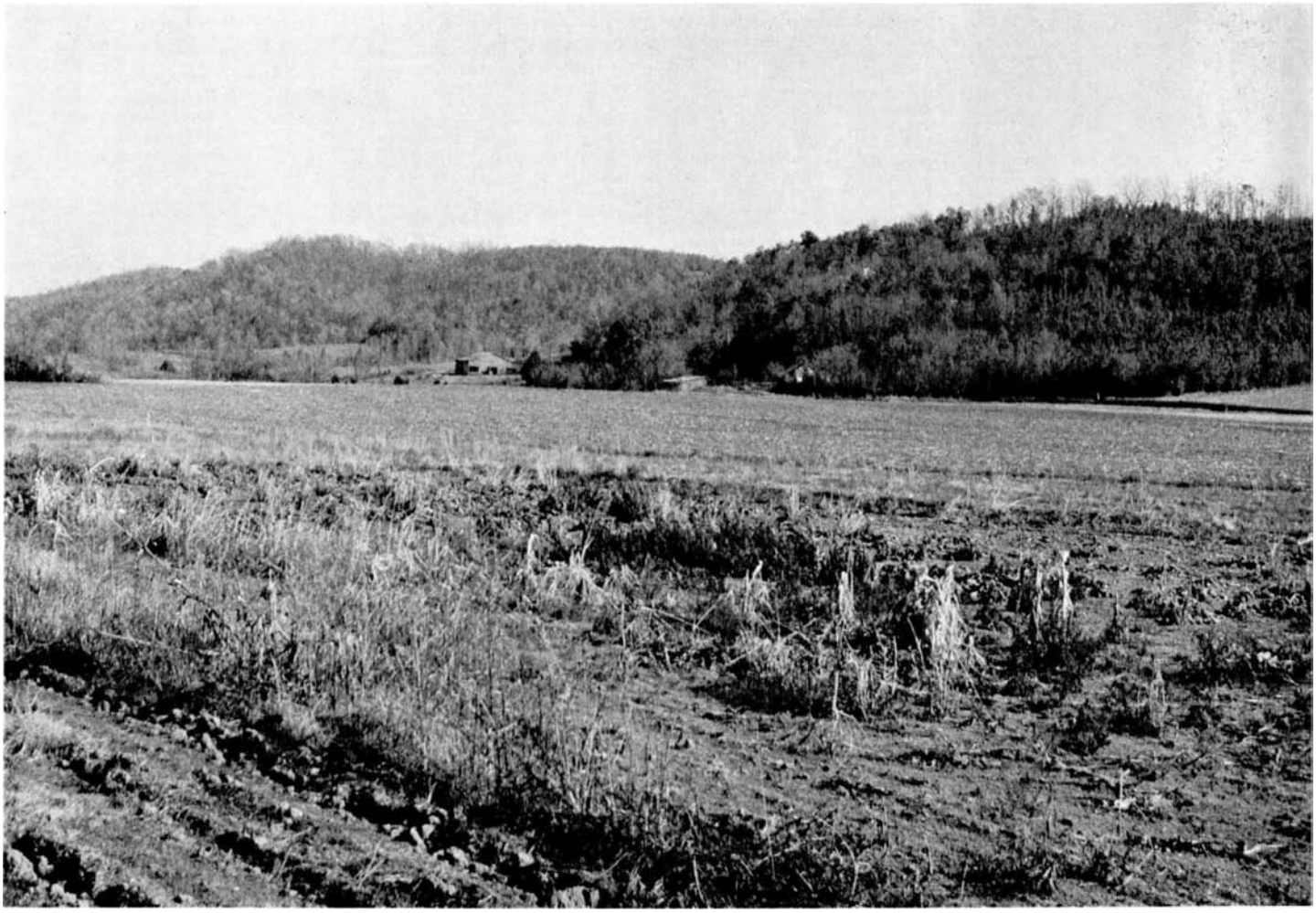

Figure 15.—**A field of Wolftever silt loam, 1 to 5 percent slopes, that has been planted to corn, a crop to which this soil is well suited. Wooded Bodine soils are on the ridges in the background.**

This soil is medium in natural fertility. It is strongly acid throughout. Available water capacity is high and permeability is moderately slow.

Most of the crops commonly grown in the county are well suited to this soil, except alfalfa and tobacco. Slope is the main limitation to use of this soil. Capability unit IIIe–3; woodland group 3w8.

Use and Management of the Soils

This section describes the use and management of the soils for crops and for pasture, for woodland, and for wildlife habitat. It also discusses uses of the soils for engineering purposes and as sites for community development.

Use of the Soils for Crops and Pasture

This subsection explains the system of capability grouping used by the Soil Conservation Service. It also describes the use and the management needed for the soils of each capability unit and provides a table that shows estimated yields of the principal crops grown under two levels of management.

Capability grouping

Capability grouping shows, in a general way, the suitability of soils for most kinds of field crops. The soils are grouped according to their limitations when used for field crops, the risk of damage when they are used, and the way they respond to treatment. The grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils; does not take into consideration possible but unlikely major reclamation projects; and does not apply to rice, cranberries, horticultural crops, or other crops requiring special management.

Those familiar with the capability classification can infer from it much about the behavior of soils when used for other purposes, but this classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for range, for forest trees, or engineering.

In the capability system, the kinds of soil are grouped at three levels: the capability class, the subclass, and the unit. These are discussed in the following paragraphs.

CAPABILITY CLASSES, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use, defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants, require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants, require very careful management, or both.

Class V soils are subject to little or no erosion but have other limitations, impractical to remove, that limit their use largely to pasture, range, woodland, or wildlife habitat. (None in Meigs County.)

Class VI soils have severe limitations that make them generally unsuited to cultivation and limit their use largely to pasture or range, woodland, or wildlife habitat.

Class VII soils have very severe limitations that make them unsuited to cultivation and that restrict their use largely to pasture or range, woodland, or wildlife habitat.

Class VIII soils and landforms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife habitat, or water supply, or to esthetic purposes. (None in Meigs County.)

CAPABILITY SUBCLASSES are soil groups within one class; they are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States but not in Meigs County, shows that the chief limitation is climate that is too cold or too dry.

In class I there are no subclasses, because the soils of this class have few limitations. Class V can contain, at the most, only the subclasses indicated by *w*, *s*, and *c*, because the soils in class V are subject to little or no erosion, though they have other limitations that restrict their use largely to pasture, range, woodland, wildlife habitat, or recreation.

CAPABILITY UNITS are soil groups within the subclasses. The soils in one capability unit are enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally designated by adding an Arabic numeral to the subclass symbol, for example, IIe–2 or IIIe–4. Thus, in one symbol, the Roman numeral designates the capability class, or degree of limitation; the small letter indicates the subclass, or kind of limitation, as defined in the foregoing paragraph; and the Arabic numeral specifically identifies the capability unit within each subclass.

Management by capability units [3]

Farming is the main enterprise in Meigs County. The soils are used mostly for pasture or for growing hay, small grains, corn, and tobacco. Burley tobacco is the principal cash crop. In the following pages, suggestions for the use and management of the soils for these main crops are given by capability units. The capability unit designation for each soil in the county can be found by referring to the "Guide to Mapping Units" at the back of this survey.

In the descriptions of capability units, specific statements are not made concerning the use of fertilizer, desirable varieties and mixtures of seeds, or favorable dates for planting. Up-to-date information about these subjects can be obtained from the Tennessee Agricultural Experiment Station or from the Extension Service. Personnel of the local office of the Soil Conservation Service and the Extension Service can help to interpret this information.

CAPABILITY UNIT I–1

This unit consists of deep, well-drained, nearly level soils on first bottoms. They are subject to occasional flooding in some places.

These soils have high available water capacity, are medium to high in natural fertility, and are easy to work. Erosion is not a hazard.

These soils can be used intensively for cultivated crops. Crops grown on them respond extremely well to management. The soils of this unit are not generally used for pasture. Their high available water capacity, however, makes them well suited to use for supplemental or perennial summer pasture.

Applying fertilizer to maintain high fertility results in large amounts of plant residue, such as roots, leaves, and stalks. Good tilth can be maintained by incorporating these plant residues into the soils.

CAPABILITY UNIT I–2

This unit consists of deep, moderately well drained soils on first bottoms and low terraces. Many of the areas are subject to flooding for short periods.

The water table normally is high in winter and spring, and the lower part of the subsoil is saturated. These soils have high available water capacity. Erosion is not a hazard.

These soils can be cultivated every year, and crops grown on them respond well to management. Corn and grain sorghum grow well, but such crops usually must be planted slightly later than on better drained soils. Small grains can be grown where surface drainage is good and where no areas are ponded or are subject to flooding. The soils are well suited to soybeans, annual lespedeza, tall

[3] By C. H. JENT, agronomist, Soil Conservation Service.

fescue, and white clover for pasture. They are well suited to use for perennial or supplemental summer pasture. In winter and early in spring, many of these soils are too wet and soft to support livestock. Thus, their use for pasture is limited.

To maintain good tilth the soils must have large amounts of plant residue returned to them. They can be satisfactorily tilled only within a narrow range of moisture content. Tilling when too wet causes the soils to become cloddy or puddled. Tilling when too dry can cause the soils to harden. In many places both surface and internal drainage can be improved by installing a system of open ditches and diversion ditches.

CAPABILITY UNIT IIe–1

This unit consists of deep, well-drained, gently sloping soils. These soils have moderately high available water capacity and a deep permeable root zone. Erosion is a hazard.

These soils are easy to work and are easy to keep in good tilth. Crops grown on these soils respond well to management. The soils in this capability unit are among the most productive in the county and are suited to moderately intensive use. They should not be cultivated every year. If adequately fertilized and well managed, they are well suited to all crops adapted to the climate.

The soils can be conserved and kept productive by means of a suitable cropping system, adequate fertilization, crop residue management, minimum or no tillage, and water management practices. Contour cultivation, terracing or stripcropping on long slopes, establishing drainageways in perennial sod, and constructing an occasional diversion terrace to safely remove excess runoff from steep slopes are water management practices that may be needed.

CAPABILITY UNIT IIe–2

This unit consists of moderately well drained, gently sloping soils that have either a mottled clayey layer or a firm, mottled layer (fragipan) at a depth of about 2 feet.

In the 2 feet above either the fragipan or the mottled clayey layer, the soil material is easily penetrated by plant roots, air, and water. In the fragipan or the clayey layer, however, the movement of air, water, and most plant roots is restricted. During periods of heavy rainfall the 4 to 10 inches of soil immediately above the fragipan or the clayey layer becomes waterlogged. During long dry periods these soils dry out and crops and pastures are damaged by lack of moisture.

The fragipan or the clayey layer is nearly impervious and limits the use of these soils. This limitation can be partly overcome by selecting plants that tolerate excessive water during wet seasons and do not use much water during dry seasons. Erosion caused by runoff is also a hazard on the longer slopes.

Row crops can be grown as often as every second year on the soils in this capability unit. A short cropping system is suitable. Suitable crops are corn, tall fescue, white clover, annual lespedeza, and sericea lespedeza. Alfalfa stands usually last only 2 to 3 years.

Management of crop residue helps control erosion and maintain tilth. Crops respond well to fertilizer and lime. All of these soils are easy to work. Contour cultivation, terracing, stripcropping, and minimum or no tillage are effective in controlling erosion. Diversion ditches are needed in places to carry runoff from adjacent steep slopes. Drainageways can be protected by establishing perennial vegetation in the channel.

CAPABILITY UNIT IIw–1

This unit consists of somewhat poorly drained soils on level first bottoms and low terraces. Surface drainage is generally slow, and many of the areas are likely to be flooded or ponded for short periods.

The water table is high, and the soils are saturated during much of winter and spring. These soils are fairly high in natural fertility and are moderate to high in available water capacity. Erosion is no hazard.

Row crops can be grown on these soils every year. The soils are well suited to soybeans, tall fescue, white clover, and lespedeza. They are well suited to supplemental summer pasture from plants such as the pearl millets or the sudangrass-sorghum hybrids. Corn usually must be planted later than on better drained soils. Small grains can be grown if ponding or flooding is not severe. The soils are too wet and too soft for cattle grazing during most of the winter and early spring months.

Surface and internal drainage can be improved in many places by open drainage and diversion ditches. To maintain good tilth these soils should be tilled within a narrow range of moisture content. Incorporating large amounts of crop residues into these soils helps maintain the content of organic matter and preserve good tilth.

CAPABILITY UNIT IIs–1

This unit consists of well drained and moderately well drained, cherty soils on first bottoms and along small drainageways. Many areas are subject to flooding for short periods.

These soils have moderate available water capacity and a deep permeable root zone. Numerous chert fragments on the surface and throughout the soils interfere with tillage. These soils are strongly acid, and crops require lime.

If these soils are well fertilized and otherwise well managed, they are well suited to many crops. Corn, soybeans, lespedeza, common and Midland bermudagrass, white clover, and tall fescue grow well on these soils. Tobacco can be grown successfully in fields that are not likely to be flooded.

These soils can be tilled within a wide range of moisture content without serious damage to their tilth. Damage from flooding and sedimentation can be reduced in many places by straightening, by cleaning, and by snagging the stream channels. Diversions are needed on some areas to protect them against runoff from adjacent uplands.

CAPABILITY UNIT IIIe–1

This unit consists of deep, well-drained soils that have a deep, permeable root zone. Slopes range from 5 to 12 percent.

The upper part of all of these soils is easily penetrated by air, water, and plant roots. The soils range from strongly acid to medium acid in reaction, and they have a moderate to high available water capacity. Erosion is a hazard. These soils are friable and easy to work.

When well fertilized and well managed, the soils of this capability unit are well suited to many crops. Examples are corn, tobacco, small grains, alfalfa, lespedeza,

orchardgrass, tall fescue, and white and red clover. These soils are well suited to plants grown commercially for nursery stocks.

Controlling erosion is the main management problem. Runoff and soil loss can be reduced by means of a suitable cropping system, adequate fertilization, crop residue management, using residue as a surface mulch with no-tillage crops, and water management practices.

Suitable cropping systems consist of one year in row crops followed by two or more years in grasses and legumes.

All of the soils respond well to lime and a complete fertilizer.

Winter cover crops are used to control erosion when soil would otherwise be bare. They are small grains, crimson clover, and hairy vetch.

Stripcropping, terracing, and using contour cultivation and diversions are effective practices for reducing soil loss. Natural drainageways should be established in a dense sod for safe removal of runoff water.

CAPABILITY UNIT IIIe–2

This unit consists of deep, well-drained, cherty or gravelly soils. Numerous angular chert fragments or pebbles are on the surface and throughout the soils. These soils have a deep root zone. Slopes range from 5 to 12 percent.

These soils have moderate available water capacity. Erosion is a hazard.

When these soils are adequately fertilized and well managed, they are moderately well suited to tobacco, small grains, annual and perennial lespedeza, and pasture plants. A good management system is to grow a row crop every 3 or 4 years, and hay or pasture crops the remainder of the time. With good management these soils are suited to the commonly grown cool-season grasses and legumes.

A complete fertilizer is needed for most crops and pasture mixtures. Boron is needed to maintain good stands of alfalfa.

Growing a row crop every 3 or 4 years and good water management practices, such as diversions, contour cultivation, and stripcropping, are effective in controlling erosion. In many places these soils can be used more intensively for row crops without appreciable soil deterioration if they are not tilled and a surface mulch of crop residue is used. Close-growing vegetation established in natural drainageways provides for the safe removal of runoff water.

CAPABILITY UNIT IIIe–3

This unit consists of moderately well drained soils that have either a mottled clayey layer or a firm, mottled layer (fragipan) at a depth of about 2 feet. Slopes range from 5 to 12 percent.

The mottled clayey layer or the fragipan restricts the penetration of plant roots and the movement of water and air. Excess water accumulates above these layers during wet periods, and the soils dry out rapidly during dry periods. Erosion is a hazard.

The use of these soils is somewhat limited by the slowly permeable or moderately slowly permeable layer in their profiles. Suitable crops are grain sorghum, tobacco, small grains, sericea lespedeza, and annual lespedeza. Small grains grow and mature during periods of ample rainfall and therefore are well suited. These soils are not well suited to alfalfa. Soils of this capability unit are well suited to pasture and hay when suitable pasture plants are established. Tall fescue, bermudagrass, and annual lespedeza can be grown on these soils.

Because of the subsoil layers and the slope, these soils are difficult to manage. Contour cultivation, stripcropping, terracing or a combination of these practices are effective in retarding runoff and reducing soil loss. Crop residue management and using residue as a surface mulch with crops such as corn and grain sorghum will lower soil loss and runoff to safe levels. Diversions are sometimes needed to carry excess water to protected outlets. Natural drains should be established in perennial vegetation to remove runoff water without excessive erosion.

CAPABILITY UNIT IIIe–4

This unit consists of well-drained soils that are underlain by limestone or soft shale rock at a depth of 2 to 5 feet. These soils have a loamy surface layer and clayey subsoil.

These soils have a moderately low available water capacity and a fairly shallow root zone.

These soils are moderately well suited to corn, tobacco, and other warm-season crops. Small grains are well suited, since ample moisture is available during their growing season. Other crops that can be grown are sorghum and pasture plants, such as bermudagrass, tall fescue, white clover, red clover, and annual lespedeza. Alfalfa will grow on these soils but it is not well suited.

A suitable cropping system is a row crop followed by small grain, and then two or more years of hay or pasture.

Adequate fertilization helps to provide larger amounts of crop residue. If properly managed when returned to the soil, residue protects soils from excessive erosion and helps maintain good tilth. Contour cultivation, terracing, or stripcropping are effective in controlling erosion where row crops are grown. Diversions may be needed to concentrate runoff water and move it to suitable outlets. Drainageways should be established and maintained in perennial vegetation for the removal of runoff water.

CAPABILITY UNIT IIIw–1

This unit consists of poorly drained soils in bottoms and on low-lying upland flats. These soils have a loamy surface layer, but the subsoil is plastic clay through which water moves slowly. Most of the areas are subject to short periods of flooding or ponding, and they stay wet until late in spring. Erosion is not a hazard.

These soils are slightly acid to neutral, and some areas are strongly acid.

Wetness in these soils is caused by a high water table, seepage from adjacent slopes, and flooding. As a result, planting of crops is delayed from a few days to several weeks in spring. During summer the soils dry out and plant roots are able to penetrate the previously waterlogged soils. The roots grow too slowly, however, to benefit from the drying and are usually limited to the upper 20 inches of the soil.

Grain sorghum, soybeans, and annual lespedeza are suited to these soils. Water-tolerant pasture plants, such as tall fescue, and white and alsike clover, also are

suited. The grazing season is limited to late spring, summer, and early fall months.

Improved drainage expands the use of these soils. When soils are adequately drained, corn, grain sorghum, soybeans, and other row crops can be grown every year. Harvest in the fall, however, is sometimes hindered by excessive wetness. When suitable outlets are available, a system of open ditches removes surface water and lowers the water table somewhat. Tile drains do not function well, due to the plastic clay subsoil. Tilling within a narrow range of moisture content is very important on these soils to prevent hard clods from forming as the soil dries. Flooding along small drainageways can often be reduced by aligning stream channels and by clearing, shaping, and establishing perennial plants on the streambanks.

These soils can be used continuously for crops because erosion is not a serious threat. Adequate fertilization insures that fairly large amounts of crop residues are available for return to the soil and good tilth is maintained.

CAPABILITY UNIT IVe–1

This unit consists of deep, well-drained soils that have a loamy surface layer and a subsoil of silty clay loam, clay loam, or clay. Most of the soils are eroded, and some are severely eroded. Slopes range from 5 to 20 percent, but are dominantly 12 to 20 percent.

These soils have a deep root zone and moderate to high available water capacity. They are very strongly acid to medium acid and medium to low in natural fertility. Erosion is a severe hazard if the soils are cultivated.

Crops respond well to additions of fertilizer and lime and other management practices. Corn, tobacco, alfalfa, tall fescue, orchardgrass, red clover, white clover, and lespedeza can be grown on these soils. The soils are well suited to improved pasture. They can be grazed any time during the year because they do not become wet and soft during the winter months.

Controlling further erosion is the main management problem. Soil and water losses can be reduced by using a suitable cropping system, proper fertilization, and good water management practices, such as contour cultivation, stripcropping, and the use of diversions and grassed waterways.

A suitable cropping system is one that includes a row crop one-fourth of the time and grasses and legumes the remainder of the time. When these soils are used more intensively, soil loss and runoff are greatly reduced if soils are not tilled and residue from a close-growing crop serves as a surface mulch.

CAPABILITY UNIT IVe–2

This unit consists of deep, well-drained, cherty or gravelly soils. Slopes range from 5 to 20 percent, but are dominantly 12 to 20 percent.

These soils have a deep root zone and have moderate to low available water capacity. Most of the soils are eroded. Content of chert fragments or of gravel in the soil ranges from about 15 to 25 percent, by volume. These soils are medium acid to strongly acid and medium to low in natural fertility.

Most of the commonly grown crops and pasture plants are moderately well suited to these soils. Summer annual plants, such as annual lespedeza and sudangrass-sorghum hybrids are not well suited. If row crops are grown, a suitable cropping system includes a cultivated crop 1 year out of 4 to 6 years and perennial pasture or hay the rest of the time. Not tilling for corn and sorghum allows more intensive use of these soils provided there is a good surface mulch of plant residue.

Because of summer drought, erosion, and the difficulty of using farm machinery, these soils are better suited to pasture or hay than to row crops. All comon grasses and legumes can be grown. Examples are tall fescue, orchardgrass, bermudagrass, white and red clover, and alfalfa.

On these soils, contouring, stripcropping, and diversions are effective in retarding runoff and in controlling further erosion. All natural drainageways should be established and maintained in perennial vegetation to control runoff.

On steeper slopes, it is often desirable to establish or reestablish pasture or hay plants in alternate contoured strips.

CAPABILITY UNIT IVe–3

This unit consists of well drained and moderately well drained soils on uplands. Limestone rock outcrops in some places. These soils have a clayey subsoil that limits the growth of roots and the movement of air and water. Slopes range from 3 to 12 percent.

These soils have low to moderate available water capacity, and they are medium to strongly acid. Erosion is a hazard.

These soils are moderately to poorly suited to corn, tobacco, and other row crops. Small grains are moderately suited because ample moisture is available during the growing season. These soils should not be cultivated more than 1 year out of 4 to 6.

These soils are moderately suited to most pasture and hay grasses and legumes. With good management, tall fescue, bermudagrass, white clover, annual lespedeza, and sericea lespedeza grow moderately well. Alfalfa can be grown, but good stands are somewhat difficult to establish and maintain. The results of soil analyses should always be used to determine lime and fertilizer needs.

Water management practices are very important on these soils. Diversions, stripcropping, and contour cultivation should be used for cultivated crops. Small grains or some other winter annual should follow any row crop grown on these soils to provide ground cover until perennial plants are reestablished.

Tillage operations should be made within a narrow range of moisture conditions. Plowing under of cover crops and returning crop residue to the soil will help maintain soil tilth.

CAPABILITY UNIT VIe–1

This unit consists of steep, deep, cherty or gravelly soils. These soils have a subsoil that is permeable to air, water, and roots. Content of chert fragments or of gravel in the soil ranges from 5 to 25 percent, by volume.

These soils are medium acid to strongly acid and range from low to medium in natural fertility. They have moderate to low available water capacity. Erosion is a hazard.

Lime and fertilizer needs are best determined by the results of annual soil analyses. Weeds and brush growth

are best controlled by applications of herbicides, because mowing the steep slopes is hazardous.

These soils are not suitable for tilled crops. They can be used for pasture, however, and some of the less sloping areas can be used for hay. A tall fescue-white clover mixture, in which annual lespedeza is introduced if the clover dies out, makes a pasture that can be maintained on these soils. Other grasses and legumes that will grow on these soils are common bermudagrass, red clover, and sericea lespedeza; however, sericea should not be grown on slopes that are too steep to mow. Grazing must be controlled and cattle removed before overgrazing occurs in order to maintain productive pasture.

When establishing or renovating pasture stands, the long, steep slopes should be planted in alternate contour strips over a 2-year period. This will help reduce erosion during the time when young pasture plants afford little erosion control. Critically eroded areas not needed or not suitable for pasture should be planted to desirable tree species.

CAPABILITY UNIT VIe–2

This unit consists of soils that are eroded or severely eroded and have a clayey subsoil. Slopes range from 3 to 20 percent. In places there are outcrops of rock.

These soils have medium to low available water capacity and a shallow root zone. They are medium acid to strongly acid and low to moderate in natural fertility.

These soils are poorly suited to tilled crops, even on the lesser slopes.

These soils are better suited to permanent pasture or hay than to field crops. If well fertilized and otherwise well managed, they are moderately well suited to tall fescue, common bermudagrass, and lespedeza. Considerable forage is obtained in spring. Little growth is made in summer and fall because there is a critical shortage of soil moisture during those periods.

Preparing an adequate seedbed is difficult on some of the soils of this capability unit because of limestone outcrops or the plastic clayey plow layer. The soils must be tilled within a narrow range of moisture content to prevent hard clods from forming.

Establishing or renovating pasture or hay in alternate contour strips will help reduce erosion during the establishment period.

CAPABILITY UNIT VIs–2

This unit consists of cherty, shaly, and channery soils, which are well drained to excessively drained and droughty. Slopes range from 5 to 30 percent.

They have low available water capacity and are low in productivity. All the soils are strongly acid or very strongly acid and low in natural fertility.

These soils are poorly suited to tilled crops, even on the lesser slopes. The use of these soils is limited to perennial grasses and legumes for pasture and for hay in some selected areas.

If adequately fertilized and otherwise well managed, tall fescue, weeping lovegrass, common bermudagrass, sericea lespedeza, and annual lespedeza are moderately well suited for producing forage in spring and early summer. Dry conditions reduce growth of forage to a small amount for the remainder of the year. Some areas may be better used by permitting native plants to regenerate and applying native pasture or rangeland management practices.

Diversions are sometimes needed, along with grassed waterways, for controlling runoff. Establishing or reestablishing pasture on the steeper, longer slopes should be done in alternate contour strips, taking two years for completing the establishment.

CAPABILITY UNIT VIIe–1

This unit consists mainly of steep and very steep, cherty soils on hills. Also in this unit are some areas that contain many deep gullies.

The soils of this capability unit are better suited to trees than to field crops or pasture plants. Some areas are used for pasture because better sites are limited. Some of the less eroded areas produce some forage from plants such as common bermudagrass, tall fescue, and annual lespedeza. To grow any appreciable amount of forage on the areas that have gullies would require expensive reclamation work. Facts about use of these soils for growing trees can be found in the section "Use of the Soils for Woodland."

CAPABILITY UNIT VIIs–1

This unit consists of mostly steep soils on hillsides. Most of the soils are shaly and shallow to rock, but some are very cherty and deep to rock. Limestone rock outcrops are in many places on some soils.

These soils have a low or very low available water capacity and low productivity.

These soils are mostly in forest. Cleared areas should be reforested. Facts about use of these soils for growing trees can be found in the section "Use of the Soils for Woodland".

Estimated yields

Table 4 shows estimated yields per acre of principal crops grown on the soils of this county under two levels of management. The yields in columns A are those to be expected under prevailing, or common management; those in columns B are yields to be expected under improved management. Under prevailing management, yields generally are 30 to 40 percent lower than those obtained under improved management.

The yields in columns B are based on test yields taken from farms in a cooperative study of soil productivity and management, and on the knowledge of agronomists and soil scientists who have had experience with crops and soils in Meigs County. They are averages of long-term yields where irrigation is not used.

The yields from the tests were adjusted to reflect the combined effects of slope, weather, and level of management. Where yields from tests were not available, yields were estimated from tests on similar soils. The hazard of flooding for soils on bottom land was disregarded in making yield estimates, because the effects of flooding must be considered locally by those familiar with the characteristics of the various streams.

To obtain the yields in columns B, the farmer fertilizes and limes each crop according to needs indicated by soil tests and by past cropping and fertilization; selects adapted, high-yielding varieties of crops; prepares the seedbed adequately; plants or seeds by suitable methods, at the appropriate time and rate; inoculates legumes;

TABLE 4.—*Estimated average yield per acre of principal crops under two levels of management*

[Yields in columns A are those obtained under common management; those in columns B are to be expected under a high level of management. Absence of yield indicates crop is not suited to the soil or is not commonly grown on it]

Soil	Corn		Tobacco		Alfalfa hay		Wheat		Lespedeza hay		Pasture	
	A	B	A	B	A	B	A	B	A	B	A	B
	Bu.	*Bu.*	*Lbs.*	*Lbs.*	*Tons*	*Tons*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Cow-acre-days*[1]	*Cow-acre-days*[1]
Beason silt loam	35	60					18	28	0.7	1.4	85	180
Bodine cherty silt loam, 5 to 20 percent slopes				1,200			18	25	.4	.7	50	90
Bodine cherty silt loam, 20 to 40 percent slopes											45	80
Capshaw silt loam, 2 to 5 percent slopes	40	65	1,450	1,800	1.5	2.5	22	35	.7	1.5	95	165
Capshaw silt loam, 5 to 12 percent slopes, eroded	38	58	1,375	1,700	1.5	2.0	21	33	.7	1.4	85	150
Chagrin silt loam	65	110	1,800	2,100	2.2	2.9	23	35	1.4	2.0	145	210
Colbert silt loam, 3 to 12 percent slopes	22	35					15	24	.4	.7	65	120
Colbert silty clay, 3 to 12 percent slopes, severely eroded							12	19	.3	.6	45	70
Conasauga silt loam, 3 to 12 percent slopes	28	40	1,300	1,500	1.5	2.0	20	28	.6	1.1	75	135
Decatur silt loam, 2 to 5 percent slopes, eroded	50	75	1,650	1,950	2.9	3.6	27	43	1.2	1.6	125	190
Decatur silt loam, 5 to 12 percent slopes, eroded	44	65	1,575	1,825	2.8	3.5	25	41	.9	1.4	110	175
Decatur silt loam, 12 to 25 percent slopes, eroded	40	58	1,500	1,675	2.4	3.2	24	38	.8	1.3	105	160
Decatur gravelly silt loam, 5 to 12 percent slopes, eroded	38	55	1,400	1,600	2.2	3.1	23	35	.7	1.2	90	140
Decatur gravelly silt loam, 12 to 20 percent slopes, eroded	34	50	1,400	1,500	1.9	2.9	22	33	.6	1.1	80	130
Decatur silty clay loam, 5 to 12 percent slopes, severely eroded	30	45	1,200	1,450	2.1	2.8	19	29	.6	1.0	85	130
Decatur silty clay loam, 12 to 20 percent slopes, severely eroded	27	40	1,150	1,375	1.7	2.5	15	27	.5	.8	70	122
Decatur gravelly silty clay loam, 12 to 20 percent slopes, eroded	28	40			1.4	2.3	19	28	.4	.7	55	95
Dowellton silt loam	30	50							.6	1.2	70	140
Dunning silty clay loam	35	55							.7	1.3	100	150
Egam silty clay loam	50	80			1.7	2.3	28	35	1.4	1.9	135	200
Emory silt loam	70	100	1,800	2,200	2.2	2.9	25	37	1.4	2.0	125	210
Ennis silt loam	60	100	1,750	2,200	1.9	2.9	27	40	1.3	2.0	140	220
Ennis cherty silt loam	45	75	1,600	2,000	1.5	2.4	23	35	1.1	1.6	120	175
Etowah silt loam, 2 to 5 percent slopes	55	85	1,850	2,200	2.6	3.6	26	43	1.3	1.8	130	200
Etowah silt loam, 5 to 12 percent slopes	50	76	1,750	2,100	2.5	3.5	25	42	1.2	1.6	120	190
Etowah gravelly silt loam, 2 to 5 percent slopes	48	75	1,650	2,000	2.3	3.0	23	36	1.0	1.4	105	175
Etowah gravelly silt loam, 5 to 12 percent slopes	44	70	1,600	1,875	2.2	2.9	22	34	.9	1.3	100	168
Fullerton silt loam, 5 to 12 percent slopes	40	67	1,500	1,900	2.0	3.2	24	38	.8	1.4	95	155
Fullerton silt loam, 12 to 20 percent slopes	37	62	1,400	1,775	1.7	3.0	22	36	.7	1.3	90	145
Fullerton cherty silt loam, 5 to 12 percent slopes	40	60	1,600	1,850	1.7	2.6	23	35	.7	1.2	90	150
Fullerton cherty silt loam, 12 to 20 percent slopes	37	52	1,525	1,775	1.5	2.5	23	33	.6	1.0	80	140
Fullerton cherty silt loam, 20 to 30 percent slopes											65	95
Fullerton cherty silt loam, 30 to 45 percent slopes											58	85
Fullerton cherty silty clay loam, 12 to 20 percent slopes, severely eroded	24	33	900	1,100	1.2	1.8	15	26	.4	.7	52	95
Fullerton cherty silty clay loam, 20 to 30 percent slopes, severley eroded									.4	.6	45	75
Gullied land, clayey material												
Gullied land, Litz soil material												
Holston loam, 2 to 5 percent slopes	46	80	1,650	2,200	1.8	2.7	25	42	.9	1.5	95	180
Holston loam, 5 to 12 percent slopes	42	72	1,600	2,100	1.6	2.6	24	40	.8	1.4	85	165
Holston gravelly loam, 5 to 12 percent slopes	38	64	1,400	1,775	1.3	2.0	22	35	.6	1.1	85	145
Humphreys silt loam, 2 to 5 percent slopes	60	95	1,700	2,200	2.0	2.9	25	40	1.3	1.8	120	190
Lehew channery loam, 5 to 20 percent slopes									.4	.9	40	65
Lehew channery loam, 20 to 60 percent slopes												
Lindside silt loam	55	90	1,200	1,650			20	25	1.4	2.0	135	210
Litz silt loam, 5 to 20 percent slopes					1.1	1.7	17	24	.6	.9	50	80
Litz silt loam, 20 to 30 percent slopes											45	75
Litz shaly silty clay loam, 5 to 20 percent slopes, severely eroded					.6	1.1	14	19	.4	.6	35	60
Lobelville cherty silt loam	46	68	1,200	1,650	1.7	2.3	17	25	1.1	1.6	115	170
Minvale silt loam, 5 to 12 percent slopes	44	75	1,750	2,200	2.3	3.0	23	40	.8	1.6	105	165
Minvale cherty silt loam, 5 to 12 percent slopes	42	62	1,650	1,850	1.8	2.7	24	37	.8	1.4	90	150
Minvale cherty silt loam, 12 to 20 percent slopes, eroded	35	56	1,550	1,775	1.6	2.5	22	34	.7	1.3	80	135
Montevallo shaly silt loam, 5 to 20 percent slopes					.7	1.4	16	25	.4	.7	35	60
Montevallo shaly silt loam, 20 to 30 percent slopes											35	55
Newark silt loam	30	50							.8	1.7	90	150
Rock land												
Sequoia silt loam, 2 to 5 percent slopes, eroded	38	60	1,650	1,850	1.9	2.9	23	38	.8	1.4	95	155
Sequoia silt loam, 5 to 12 percent slopes, eroded	34	52	1,600	1,775	1.8	2.7	21	35	.7	1.1	90	140
Sequoia silty clay, 5 to 12 percent slopes, severely eroded	23	36	1,200	1,400	1.1	2.1	14	27	.4	.8	65	110

See footnote at end of table.

TABLE 4.—*Estimated average yield per acre of principal crops under two levels of management*—Continued

Soil	Corn		Tobacco		Alfalfa hay		Wheat		Lespedeza hay		Pasture	
	A	B	A	B	A	B	A	B	A	B	A	B
	Bu.	*Bu.*	*Lbs.*	*Lbs.*	*Tons*	*Tons*	*Bu.*	*Bu.*	*Tons*	*Tons*	*Cow-acre-days*[1]	*Cow-acre-days*[1]
Shouns silt loam, 5 to 12 percent slopes	43	75	1,750	2,220	2.2	3.0	23	41	.8	1.5	100	165
Shouns silt loam, 12 to 20 percent slopes, eroded	38	68	1,650	2,000	2.1	2.8	21	38	.7	1.4	95	150
Shouns silty clay loam, 10 to 20 percent slopes, severely eroded	33	52	1,500	1,675	1.7	2.4	18	32	.5	1.1	75	130
Staser fine sandy loam, coarse subsoil variant	65	90	1,650	2,000	1.9	2.6	24	38	1.3	1.8	130	190
Talbott silt loam, 2 to 5 percent slopes	32	48	1,500	1,700	1.8	2.9	24	35	.7	1.3	90	150
Talbott silt loam, 5 to 12 percent slopes, eroded	30	44	1,300	1,550	1.7	2.6	22	32	.6	1.1	82	140
Talbott silt loam, 12 to 20 percent slopes, eroded	----	----	----	----	1.6	2.3	21	30	.5	1.0	75	130
Talbott silty clay, 5 to 20 percent slopes, severly eroded	----	----	----	----	1.0	2.0	15	25	.4	.7	40	80
Talbott-Rock outcrop complex, 5 to 20 percent slopes	----	----	----	----	----	----	----	----	----	----	30	55
Tarklin silt loam, 2 to 8 percent slopes	44	68	1,550	1,850	1.4	2.2	24	35	.8	1.5	90	160
Tarklin cherty silt loam, 2 to 5 percent slopes	38	54	1,500	1,700	1.3	2.0	23	33	.7	1.3	80	150
Tarklin cherty silt loam, 5 to 12 percent slopes	36	52	1,500	1,700	1.3	2.1	23	33	.7	1.2	75	140
Teas silt loam, 5 to 20 percent slopes	----	----	----	----	.9	1.7	17	24	.6	1.1	55	80
Teas silt loam, 20 to 40 percent slopes	----	----	----	----	----	----	----	----	----	----	45	70
Waynesboro clay loam, 5 to 20 percent slopes, eroded	28	46	1,350	1,600	1.8	2.4	19	30	.5	.8	70	115
Waynesboro gravelly loam, 5 to 12 percent slopes	35	54	1,500	1,750	1.8	2.5	20	35	.7	1.2	85	140
Waynesboro gravelly loam, 12 to 20 percent slopes	30	50	1,450	1,700	1.7	2.3	18	33	.6	1.1	80	135
Waynesboro gravelly loam, 20 to 30 percent slopes	----	----	----	----	----	----	----	----	----	----	70	120
Waynesboro loam, 5 to 12 percent slopes	45	75	1,700	2,200	2.2	3.4	24	42	1.0	1.5	100	170
Waynesboro loam, 12 to 20 percent slopes	40	68	1,650	2,000	2.1	3.1	22	40	.8	1.3	95	160
Waynesboro gravelly clay loam, 5 to 20 percent slopes, eroded	26	38	1,250	1,550	1.2	1.9	14	26	.4	.8	60	100
Whitwell loam, 0 to 5 percent slopes	48	78	----	----	1.1	1.9	17	27	1.2	1.8	115	175
Wolftever silt loam, 1 to 5 percent slopes	45	70	----	----	1.1	1.9	18	28	1.2	1.7	115	175
Wolftever silt loam, 5 to 12 percent slopes, eroded	42	65	----	----	1.1	1.9	18	28	1.1	1.6	110	165

[1] Number of days 1 acre will provide grazing for one cow, horse, or steer; five swine, or seven sheep without damage to the pasture.

uses shallow cultivation if row crops are grown; controls weeds, insects, and diseases; uses a cropping system suggested in the subsection "Management by Capability Units" or a similar cropping system; conserves soil and water by establishing waterways, cultivating on the contour, terracing, or contour stripcropping; and protects pastures from overgrazing.

The following paragraphs give the rates of seeding and fertilizing that are required to obtain the yields in columns B of table 4.

Corn.—For soils that show yields of 85 bushels or more per acre, 100 to 125 pounds of nitrogen (N) per acre are required. Plant to insure a stand of 12,000 to 16,000 plants per acre. For soils that show yields of 60 to 85 bushels per acre, 75 to 100 pounds of nitrogen are required for 8,000 to 12,000 plants per acre. For soils that show yields of 40 to 60 bushels per acre, 50 to 70 pounds of nitrogen are required. Enough seed should be planted to insure about 8,000 plants per acre. For all yields apply phosphate (P_2O_5) and potash (K_2O) in amounts indicated by the results of soil tests. The nitrogen can be supplied in commercial fertilizer, in barnyard manure, in the residue of legumes, or in any combination of these. If the estimated yield in column B is less than 40 bushels per acre, the soil is poorly suited to corn and may be better suited to some other crop.

The rates of fertilization and planting of corn grown for silage are the same as those of corn grown for grain. To determine the approximate yield of corn silage, in tons, divide the number of bushels of grain by 5.

Burley tobacco.—To obtain the yields of tobacco shown in column B of table 4, apply 100 to 130 pounds of nitrogen at or shortly before planting time and use 8,500 to 10,000 plants per acre. Nitrogen may be supplied in commercial fertilizer or in a combination of commercial fertilizer and barnyard manure. Apply phosphate (P_2O_5) and potash (K_2O) in amounts indicated by the results of soil tests.

Alfalfa.—When alfalfa is seeded apply 20 pounds of borax per acre, and apply 20 pounds annually after the first year of production. After the first year, apply annually the amounts of phosphate and potash indicated by the results of soil tests, or apply 30 pounds of phosphate and at least 120 pounds of potash per acre. Control grazing, and do not cut hay between September 10 and the first killing frost. The estimated yields in table 4 do not apply to soils that are ponded or flooded.

Wheat.—To obtain the yields of wheat listed in column B of table 4, apply 30 pounds of nitrogen per acre in fall at seeding time. Apply phosphate and potash in amounts indicated by the results of soil tests.

Lespedeza.—To obtain the yields of lespedeza listed in column B of table 4, seed Kobe lespedeza alone in spring on a prepared seedbed or allow it to volunteer. Add fertilizer as indicated by the results of soil tests.

Annual yields of lespedeza overseeded on a small grain harvested for grain are about 50 to 60 percent less than yields of lespedeza seeded alone. Overseeding generally results in nearly complete failure of the lespedeza once every 2 years. If the small grain is harvested for hay,

the yields of the lespedeza are generally about 20 percent less than those of lesepdeza seeded alone.

Pasture.—To obtain the yields of pasture listed in column B of table 4, apply phosphate and potash at seeding time according to the results of soil tests, and if the clover in the mixture is sparse, topdress with 30 pounds of nitrogen per acre each year late in February.

Pasture plants suited to the soils in this county are too numerous to list. The yields estimated for the poorly drained soils, such as Dowellton, are those of a mixture of tall fescue and white clover. The yields estimated for the rest of the soils are those of orchardgrass mixed with white clover and of tall fescue mixed with white clover. For information about suitability of specific soils for specific pasture plants, see the section "Descriptions of the Soils" and the subsection "Management by Capability Units."

Use of the Soils for Woodland [4]

This subsection interprets the soils of the county in terms of the potential of the soils for production of wood crops, and points out soil-related limitations in managing the soils for this purpose.

When Meigs County was opened to settlers about 1809, it was covered with virgin forests of oak, hickory, beech, yellow-poplar, sweetgum, shortleaf pine, loblolly pine, and many other trees. By 1874 many of the areas in forest had been cleared for crops. Some of these areas were later abandoned, and these old fields have naturally reseeded primarily to shortleaf pine, Virginia pine, and loblolly pine.

In 1961, woodland covered about 63 percent of the county, or 77,600 acres (*8*). This was a total increase of over 18,000 acres from a previous inventory taken in 1950. Almost 2,000 acres of open land were reforested from 1957 to 1960 under the Soil Bank Conservation Reserve Program. During this same period an additional 3,700 acres was planted to pines. Interest in reforestation of idle or marginal land was stimulated by the establishment of a large pulp and paper mill in an adjoining county which provided a ready market for all sizes and species of timber. There were no permanent wood-using industries in Meigs County in 1968, but excellent markets for all types of timber are available in adjoining counties. About 60 percent of the woodland acreage is in holdings of less than 500 acres.

Woodland suitability groups

The soils of Meigs County have been assigned to 15 woodland groups. Groupings are based on the potential of the soils for production of wood crops and on soil characteristics that affect management. The soils in each group have about the same suitability for trees, are about the same in productivity, and have limitations that require similar management. Gullied land and Rock land are not assigned to any group because these land types vary greatly. Onsite investigation is needed in each area.

Table 5 shows the woodland groups the mapping units, the potential productivity of specified trees, and the factors to be considered in management. The woodland group designation for each soil in the county is shown in the "Guide to Mapping Units" at the back of this survey.

The first number in the group symbols used in Meigs County indicates the relative potential productivity of the soils in the group for wood crops. It expresses the site quality, which is based on the site index of one or more important forest types or species. The numeral 1 indicates that potential productivity is very high, 2 indicates high, 3 indicates moderately high, 4 indicates moderate, and 5 indicates low.

The second part of the symbol indicates an important soil property that imposes a hazard or limitation. The letter *x* indicates stoniness or rockiness; *w* indicates excessive wetness; *d* indicates management limitations caused by restrictive rooting depth; *c* indicates that the main limitation is the amount of clayey material in the soil profile; *f* indicates that large amounts of coarse fragments in the soil profile adversely affect woodland management; *r* indicates that the slope is the main limitation; and *o* indicates no significant limitation.

The third part of the symbol indicates the degree of hazard or limitation and the general suitability of the soils for certain kinds of trees. The numeral 1 indicates that the soils have no significant limitation and are best suited to needleleaf trees (pines and redcedar); 2 indicates the soils have a slight to moderate limitation and are best suited to needleleaf trees; 3 indicates the soils have a moderate to severe limitation and are best suited to needleleaf trees; 4 indicates the soils have no significant limtiation and are best suited to broadleaf trees; 5 indicates the soils have a slight to moderate limitation and are best suited to broadleaf trees; 6 indicates the soils have a moderate to severe limitation and are best suited to broadleaf trees; 7 indicates no significant limitation and suitability for both needleleaf and broadleaf trees; 8 indicates a slight to moderate limitation and suitability for both needleleaf and broadleaf trees; 9 indicates a moderate to severe limitation and suitability for both needleleaf and broadleaf trees. The numeral 0 indicates that the soils are not suitable for the production of commercial wood crops.

Productivity.—The important wood crops for the soils of each group are listed under this heading, and each is rated according to site index range and average yearly growth. Site index is the average height, in feet, that the dominant and codominant trees of a given species, growing on the specified soils, will reach in 50 years. The site index for cottonwoods is based on age 30. The site indexes given in this survey are based on measurements of trees of different species. The average annual growth, to age 60, in board feet (International rule) is based on the average site index.

Erosion hazard.—Ratings under this heading refer to the degree of potential soil erosion when trees are cut and removed from the stand. A rating of *slight* indicates little or no erosion hazard. A rating of *moderate* indicates that some erosion control is needed. A rating of *severe* indicates that intensive treatment, and the use of special equipment and methods of operation are needed.

Seedling mortality.—Under this heading are ratings that refer to the expected loss of seedlings as a result of unfavorable soil characteristics or topographic features, not as a result of plant competition. Even if healthy

[4] By C. M. HENNINGER, forester, Soil Conservation Service.

seedlings of suitable species are planted correctly or occur naturally in adequate numbers, some will not survive if conditions are unfavorable. The ratings are based on the mortality of seedlings among the number normally planted for adequate stockings. Mortality is *slight* if less than 25 percent of the seedlings die; *moderate* if between 25 and 50 percent die; and severe if more than 50 percent die.

Equipment limitation.—Some soil characteristics and topographic features restrict or prohibit the use of conventional equipment for planting and harvesting wood crops, constructing roads, controlling unwanted vegetation, and controlling fires. The limitation is *slight* if there is little or no restriction on the type of equipment or on the time of the year that equipment can be used. The limitation is *moderate* if the use of equipment is restricted by one or more unfavorable characteristics, such as slope, stones or other obstructions, seasonal wetness, instability, or risk of injury to roots of trees. The limitation is *severe* if special equipment is needed, and if the use of this equipment is severely restricted by one or more unfavorable soil characteristics.

Preferred species.—The kinds of trees to be favored in management of existing stands and the kinds to be chosen for planting are listed under this heading. Selection of preferred species is based on their rate of growth and on the quality, value, and general marketability of the products obtained from each species.

TABLE 5.—*Productivity, hazards and limitations, and preferred species by woodland suitability groups of soils*

[Gullied land, clayey material (Gu), Gullied land, Litz soil material (Gv), and Rock land (Ro) are not classified because properties are too variable; onsite evaluation required]

Woodland suitability group, description of soils, and map symbols	Productivity			Erosion hazard	Seedling mortality	Equipment limitation	Preferred tree species
	Measured woodland trees	Site index	Average annual growth per acre [1]				
			Bd. ft.				
Group 2o7:							
Nearly level, gently sloping and sloping, well-drained soils; loamy to a depth of 4 feet or more. Ch, Eg, Em, En, Eo, EsB, EsC, EtB, EtC, HuB, St.	Yellow-poplar	100	545	Slight	Slight	Slight	Yellow-poplar,[2] black walnut,[2] loblolly pine,[2] black cherry, upland oaks, white ash, and sugar maple.
	Loblolly pine	90	825				
	Upland oaks						
	Shortleaf pine	80	290				
		80	740				
Group 2w8:							
Nearly level, moderately well drained and somewhat poorly drained soils, mostly on bottom lands; loamy to a depth of 4 feet or more. Ln, Lv, Ne, WtB.	Yellow-poplar	100	545	Slight	Moderate	Slight to moderate.	Yellow-poplar,[2] black walnut,[2] loblolly pine,[2] sweetgum, and bottom-land oaks.
	Loblolly pine	90	825				
	Upland oaks	80	290				
	Bottom-land oaks	90	440				
	Sweetgum	90	440				
Group 2w9:							
Nearly level, poorly drained soils on bottom lands; clayey, plastic subsoil. Du.	Sweetgum	90	440	Slight	Severe	Severe	Loblolly pine,[2] cottonwood,[2] and sweetgum.
	Loblolly pine	90	825				
	Cottonwood	100	645				
Group 3o7:							
Gently sloping to moderately steep, well drained and moderately well drained soils; loamy and clayey subsoil. CaB, CaC2, DaB2, DaC2, DaD2, DbC2, DbD2, FaC, FaD, FcC, FcD, HoB, HoC, HsC, MnC, MrC, MrD2, SeB2, SeC2, SnC, SnD2, TlB, TnB, TnC, WaC, WaD, WgC, WgD.	Yellow-poplar	90	440	Slight	Slight	Slight	Yellow-poplar,[2] loblolly pine,[2] black walnut,[2] shortleaf pine, and upland oaks.
	Loblolly pine	80	650				
	Upland oaks	70	196				
	Virginia pine	70	495				
	Shortleaf pine	70	600				

See footnotes at end of table.

TABLE 5.—*Productivity, hazards and limitations, and preferred species by woodland suitability groups of soils*—Continued

Woodland suitability group, description of soils, and map symbols	Productivity			Erosion hazard	Seedling mortality	Equipment limitation	Preferred tree species
	Measured woodland trees	Site index	Average annual growth per acre [1]				
			Bd. ft.				
Group 3w8. Level to sloping, moderately well drained and somewhat poorly drained soils; loamy and clayey subsoil. Be, WvB, WvC2.	Yellow-poplar	90	440	Slight	Moderate	Slight to moderate.	Loblolly pine,[2] yellow-poplar,[2] sweetgum, and red maple.
	Sweetgum	80	330				
	Upland oaks	70	330				
	Loblolly pine	80	650				
Group 3w9: Nearly level, poorly drained soils; clayey, plastic subsoil; suitable for hardwoods. Do.	Sweetgum	80	330	Slight	Severe	Severe	Loblolly pine,[2] sweetgum,[2] bottom-land oaks, and green ash.
	Loblolly pine	80	650				
	Bottom-land oaks	80	330				
Group 3c2: Gently sloping to moderately steep, moderately well drained and well drained soils; clayey, plastic subsoil. CsC, TaB, TaC2, TaD2.	Loblolly pine	80	650	Slight	Slight to moderate.	Slight to moderate.	Loblolly pine,[2] Virginia pine,[2] and eastern redcedar.
	Upland oaks	70	195				
	Virginia pine	70	495				
	Eastern redcedar	50	220				
Group 3f8: Sloping to steep, well-drained and excessively drained soils; many shale or chert fragments throughout. BoE (north and east exposures), LsD, LsE.	Yellow-poplar	90	440	Slight to moderate.	Slight to moderate.	Moderate	Loblolly pine,[2] shortleaf pine,[2] Virginia pine,[2] yellow-poplar, and upland oaks.
	Upland oaks	70	195				
	Shortleaf pine	70	600				
	Virginia pine	70	495				
	Loblolly pine	80	650				
Group 3r8: Steep, well-drained soils; clayey subsoil; high content of gravel or chert fragments throughout the profile. FcE, FcF, WgE.	Yellow-poplar	90	440	Moderate	Moderate	Slight to moderate.	Yellow-poplar,[2] loblolly pine,[2] Virginia pine,[2] shortleaf pine,[2] black walnut,[2] upland oaks, and eastern redcedar.
	Upland oaks	70	195				
	Shortleaf pine	70	600				
	Virginia pine	70	495				
	Loblolly pine	80	650				
	Eastern redcedar	50	220				
Group 4x3: Sloping and moderately steep soils; clayey, plastic subsoil; outcrops of limestone bedrock. TkD.	Loblolly pine	70	500	Slight	Severe	Severe	Loblolly pine,[2] Virginia pine,[2] and eastern redcedar.
	Virginia pine	60	410				
	Eastern redcedar	40	170				
Group 4c2: Sloping, moderately well drained soils; very plastic, clayey subsoil; limestone rock generally at a depth of 2 feet. ClC.	Loblolly pine	70	500	Slight	Slight	Moderate	Loblolly pine, [2] Virginia pine,[2] and eastern redcedar.
	Virginia pine	60	410				
	Eastern redcedar	40	170				
Group 4c3e: Sloping to steep, well-drained soils; loamy and clayey subsoil. DcC3, DcD3, DdD2, FdD3, FdE3, LtD3, SkC3, SoD3, TcD3, WhD2, WkD2.	Loblolly pine	70	500	Slight to moderate.	Moderate to severe.	Moderate to severe.	Loblolly pine,[2] Virginia pine,[2] and eastern redcedar.
	Virginia pine	60	410				
	Eastern redcedar	40	170				

See footnotes at end of table.

TABLE 5.—*Productivity, hazards and limitations, and preferred species by woodland suitability groups of soils*—Continued

Woodland suitability group, description of soils, and map symbols	Productivity			Erosion hazard	Seedling mortality	Equipment limitation	Preferred tree species
	Measured woodland trees	Site index	Average annual growth per acre [1]				
			Bd. ft.				
Group 4d3: Sloping to steep, well-drained, shaly soils. MtD, MtE.	Loblolly pine Shortleaf pine Virginia pine	70 60 60	500 480 410	Slight to severe.	Slight to moderate.	Moderate to severe.	Loblolly pine, shortleaf pine, and Virginia pine.[2]
Group 4f3: Sloping to very steep, excessively drained and well-drained soils; loamy subsoil; many coarse fragments throughout the soil. BoD, BoE (south and west exposures); LeD, LeF, TsD, TsE.	Loblolly pine Shortleaf pine Virginia pine Upland oaks	70 60 60 60	500 480 410 120	Slight to moderate.	Slight to severe.	Moderate to severe.	Loblolly pine,[2] shortleaf pine,[2] Virginia pine,[2] and eastern redcedar.
Group 5c3e: Sloping, moderately well drained soils; clayey surface soil and clayey, plastic subsoil; bedrock at a depth of 2 feet. CoC3.	Eastern redcedar	30	135	Slight to moderate.	Moderate	Severe	Eastern redcedar.

[1] For well-stocked stands in board feet, International rule. Increment computed to age 30 for cottonwood and to age 60 for all other species.

[2] Species suitable for planting.

Soil Interpretations for Wildlife Habitat [5]

The wildlife population of any area depends upon the availability of food, cover, and water in a suitable combination. Habitats are created, improved, or maintained by establishing desirable vegetation and developing water supplies in suitable places.

Table 6 shows the suitability of the soils in Meigs County for elements of wildlife habitat and for three classes of wildlife. These ratings refer only to the suitability of the soil and do not take into account the climate, the present use of the soil, or the distribution of wildlife and people. The suitability of individual sites has to be determined by onsite inspection.

Numeral 1 means well suited. Habitat generally is easily created, improved, or maintained; the soil has few or no limitations that affect management; and satisfactory results can be expected.

Numeral 2 means suited. Habitat can be created, improved, or maintained in most places; the soil has moderate limitations that affect management; and moderately intensive management is generally needed for satisfactory results.

Numeral 3 means poorly suited. Habitat can be created, improved, or maintained in most places; limitations are severe; habitat management is difficult and expensive; and results are not always satisfactory.

Numeral 4 means unsuited. Habitat is impractical or impossible to create, improve, or maintain and unsatisfactory results are probable.

The habitat elements shown in table 6 are defined in the following paragraphs.

Grain and seed crops are grain-producing or seed-producing annuals, such as corn, sorghum, millet, and soybeans.

Grasses and legumes are domestic grasses and legumes that are established by planting and furnish food and cover for wildlife. They include tall fescue, orchardgrass, ryegrass, and panicgrasses. Legumes include clover, annual lespedeza, and bush lespedeza.

Wild herbaceous upland plants are native or introduced perennial grasses, forbs, and weeds that provide food and cover for upland wildlife. Examples are beggarweed or tickclover, perennial lespedeza, wild bean, pokeberry, partridgepea, and cheatgrass.

Hardwood woody plants are nonconiferous trees, shrubs, and woody vines that produce fruit, nuts, buds, catkins, or foliage (browse) used extensively as food by wildlife. These plants commonly become established through natural processes, but they may be planted. Examples are oak, hickory, beech, walnut, cherry, dog-

[5] By FLOYD R. FESSLER, biologist, Soil Conservation Service.

wood, viburnum, maple, grape, honeysuckle, sumac, greenbrier, and elaeagnus.

Coniferous woody plants are cone-bearing trees and shrubs that are used mainly as cover but may furnish food in the form of browse, seed, or fruitlike cones. They become established through natural processes, or they may be planted. They include pine, hemlock, and ornamental plants.

Wetland food and cover plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. These do not include submerged or floating aquatic plants. They furnish food or cover and are used mostly by wetland wildlife. Examples are smartweed, wild millet, spikerush and other rushes, sedges, burreed, tearthumb, and aneilema.

Shallow water developments are low dikes or other water-control structures established to create habitat principally for waterfowl. They may be designed so that they can be drained, planted, and flooded, or they may be used as permanent impoundments for submerged aquatics. Both fresh water and brackish water situations are included.

The three classes of wildlife listed in table 6 are defined in the following paragraphs.

Openland wildlife include quail, doves, cottontail rabbit, fox, meadowlark, field sparrow, and other birds and mammals that normally live on cropland, pasture, meadow, lawn, and in other openland areas where grasses, herbs, and shrubby plants grow.

Woodland wildlife include woodcock, thrush, vireo, squirrel, deer, raccoon, wild turkey, and other birds and mammals that normally live in wooded areas where hardwood trees and shrubs and coniferous trees grow.

Wetland wildlife include duck, geese, rail, heron, shore birds, mink, and other birds and mammals that normally live in marshes, swamps, and other wet areas.

TABLE 6.—*Suitability of soils for elements of wildlife habitat and kinds of wildlife*

[Soils rated 1 are well suited; 2, suited; 3, poorly suited; and 4, unsuited]

Soil series and map symbols	Elements of wildlife habitat							Kinds of wildlife		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants	Hardwood woody plants	Coniferous woody plants	Wetland food and cover plants	Shallow water development	Openland wildlife	Woodland wildlife	Wetland wildlife
Beason: Be	2	2	1	1	3	3	2	1	2	2
Bodine:										
BoD	3	2	2	1	3	4	4	2	2	4
Bo E	4	3	2	2	3	4	4	3	2	4
Capshaw:										
CaB	1	1	1	1	3	3	3	1	1	3
CaC2	2	1	1	1	3	4	4	1	1	4
Chagrin: Ch	1	1	1	1	3	4	4	1	1	4
Colbert:										
ClC	3	2	2	2	2	4	4	2	2	4
CoC3	4	3	2	2	2	4	4	3	2	4
Conasauga: CsC	3	2	2	2	3	4	4	2	2	4
Decatur:										
DaB2	1	1	1	1	3	4	4	1	1	4
DaC2	2	1	1	1	3	4	4	1	1	4
DaD2	3	2	1	1	3	4	4	2	2	4
DbC2	2	1	1	1	3	4	4	1	1	4
DbD2	3	2	1	1	3	4	4	2	2	4
DcC3	2	1	1	1	3	4	4	1	1	4
DcD3	3	2	1	1	3	4	4	2	2	4
DdD2	3	2	1	1	3	4	4	2	2	4
Dowellton: Do	3	2	2	2	2	2	2	2	2	2
Dunning: Du	3	2	2	2	2	2	2	2	2	2
Egam: Eg	1	1	1	1	3	3	3	1	1	3
Emory: Em	1	1	1	1	3	4	4	1	1	4
Ennis:										
En	1	1	1	1	3	4	4	1	1	4
Eo	1	1	1	1	3	4	4	1	1	4

TABLE 6.—*Suitability of soils for elements of wildlife habitat and kinds of wildlife*—Continued

Soil series and map symbols	Elements of wildlife habitat							Kinds of wildlife		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants	Hardwood woody plants	Coniferous woody plants	Wetland food and cover plants	Shallow water development	Openland wildlife	Woodland wildlife	Wetland wildlife
Etowah:										
EsB	1	1	1	1	3	4	4	1	1	4
EsC	2	1	1	1	3	4	4	1	1	4
EtB	1	1	1	1	3	4	4	1	1	4
EtC	2	1	1	1	3	4	4	1	1	4
Fullerton:										
FaC	2	1	1	1	3	4	4	1	1	4
FaD	3	2	1	1	3	4	4	2	2	4
FcC	2	1	1	1	3	4	4	1	1	4
FcD	3	2	1	1	3	4	4	2	2	4
FcE	4	2	1	1	3	4	4	2	2	4
FcF	4	4	1	1	3	4	4	3	2	4
FdD3	3	2	1	1	3	4	4	2	2	4
FdE3	4	2	1	1	3	4	4	2	2	4
Gullied land:										
Gu	4	3	3	3	3	4	4	4	3	4
Gv	4	3	3	3	3	4	4	4	4	4
Holston:										
HoB	1	1	1	1	3	4	4	1	1	4
HoC	2	1	1	1	3	4	4	1	1	4
HsC	2	1	1	1	3	4	4	1	1	4
Humphreys: HuB	1	1	1	1	3	4	4	1	1	4
Lehew:										
LeD	4	2	2	3	2	4	4	3	3	4
LeF	4	3	2	3	2	4	4	3	3	4
Lindside: Ln	2	1	1	1	3	3	3	1	1	3
Litz:										
LsD	3	2	2	2	2	4	4	2	2	4
LsE	4	3	2	2	2	4	4	3	2	4
LtD3	3	3	2	2	2	4	4	2	2	4
Lobelville: Lv	2	1	1	1	3	3	3	1	1	3
Minvale:										
MnC	2	1	1	1	3	4	4	1	1	4
MrC	2	1	1	1	3	4	4	1	1	4
MrD2	3	2	1	1	3	4	4	2	2	4
Montevallo:										
MtD	4	3	2	2	2	4	4	3	2	4
MtE	4	3	2	2	2	4	4	3	2	4
Newark: Ne	2	2	2	1	3	2	2	1	2	2
Rock land: Ro	4	4	3	4	4	4	4	4	4	4
Sequoia:										
SeB2	2	1	1	1	3	4	4	1	1	4
SeC2	2	1	1	1	3	4	4	1	1	4
SkC3	3	2	1	1	3	4	4	2	2	4
Shouns:										
SnC	2	1	1	1	3	4	4	1	1	4
SnD2	3	2	1	1	3	4	4	2	2	4
SoD3	3	2	1	1	3	4	4	2	2	4
Staser, coarse subsoil variant: St	1	1	1	1	3	4	4	1	1	4

TABLE 6.—*Suitability of soils for elements of wildlife habitat and kinds of wildlife*—Continued

Soil series and map symbols	Elements of wildlife habitat							Kinds of wildlife		
	Grain and seed crops	Grasses and legumes	Wild herbaceous upland plants	Hardwood woody plants	Coniferous woody plants	Wetland food and cover plants	Shallow water development	Openland wildlife	Woodland wildlife	Wetland wildlife
Talbott:										
TaB	2	1	1	1	3	4	4	1	1	4
TaC2	2	1	1	1	3	4	4	1	1	4
TaD2	3	2	1	1	3	4	4	2	2	4
TcD3	4	2	2	1	3	4	4	3	2	4
TkD	4	3	3	2	3	4	4	4	3	4
Tarklin:										
TlB	2	1	1	1	3	3	3	1	1	3
TnB	2	1	1	1	3	3	3	1	1	3
TnC	2	1	1	1	3	4	4	1	1	4
Teas:										
TsD	3	2	1	1	3	4	4	2	2	4
TsE	4	3	1	1	3	4	4	3	2	4
Waynesboro:										
WaC	2	1	1	1	3	4	4	1	1	4
WaD	3	2	1	1	3	4	4	2	2	4
WgC	2	1	1	1	3	4	4	1	1	4
WgD	3	2	1	1	3	4	4	2	2	4
WgE	4	2	1	1	3	4	4	3	2	4
WhD2	3	2	1	1	3	4	4	2	2	4
WkD2	3	2	1	1	3	4	4	2	2	4
Whitwell: WtB	2	1	1	1	3	3	3	1	1	3
Wolftever:										
WvB	2	1	1	1	3	3	3	1	1	3
WvC2	2	1	1	1	3	4	4	1	1	4

Engineering Uses of the Soils [6]

This subsection is useful to those who need information about soils used as structural material or used as a foundation upon which structures are built. Among those who can benefit from this section are planning commissions, town and city managers, land developers, engineers, contractors, and farmers.

Among the properties of soils highly important in engineering are permeability, strength, compaction characteristics, soil drainage condition, shrink-swell potential, grain size, plasticity, and soil reaction. Also important are depth to the water table, depth to bedrock, and soil slope. These properties, in various degrees and combinations, affecting construction and maintenance of roads, airports, pipelines, foundations for small buildings, irrigation systems, ponds and small dams, and systems for disposal of sewage and refuse.

Information in this part of the soil survey can be helpful to those who—

1. Select potential residential, industrial, commercial, and recreational sites.
2. Evaluate alternate routes for roads, highways, pipelines, and underground cables.
3. Seek sources of gravel, sand, or clay.
4. Plan farm drainage systems, irrigation systems, ponds, terraces, and other structures for controlling water and conserving soil.
5. Select sites that are suitable for use as filter fields for septic tanks.
6. Correlate performance with soil mapping units to develop information that will be useful in designing and maintaining engineering structures.
7. Determine the suitability of soils for cross-country movement of vehicles and construction equipment.
8. Develop other preliminary estimates pertinent to construction in a particular area.

Most of the information in this section is presented in tables 7 and 8, which show, respectively, several estimated soil properties significant to engineering and interpretations for various engineering uses.

This information, along with the soil map and other parts of this survey, can be used to make interpretations in addition to those given in tables 7 and 8, and it also can be used to make other useful maps.

This information, however, does not eliminate the need for sampling and testing at the site of specific engineering works involving heavy loads and excavations deeper

[6] JOE D. CARMACK, soils engineer, Soil Conservation Service, assisted with the preparation of this section.

than the depth of layers here reported, generally depths greater than 5 feet.

Some of the terms used in this soil survey have special meaning to soil scientists. The Glossary defines many of these terms commonly used in soil science.

Engineering classification systems

The two systems most commonly used in classifying samples of soils for engineering are the Unified system (*9*) used by the SCS engineers, Department of Defense, and others, and the AASHO system adopted by the American Association of State Highway Officials (*1*).

In the Unified system soils are classified according to particle size distribution, plasticity, liquid limit, and organic matter. Soils are grouped in 15 classes. There are eight classes of coarse-grained soils, identified as GW, GP, GM, GC, SW, SP, SM, and SC; six classes of fine-grained soils, identified as ML, CL, OL, MH, CH, and OH; and one class of highly organic soils, identified as Pt. Soils on the borderline between two classes are designated by symbols for both classes; for example, ML–CL.

The AASHO system is used to classify soils according to those properties that affect highway construction and maintenance. In this system, a soil is placed in one of seven basic groups ranging from A–1 through A–7 on the basis of grain-size distribution, liquid limit, and plasticity index. In group A–1 are gravelly soils of high bearing strength, or the best soils for subgrade (foundation). At the other extreme, in group A–7, are clay soils that have low strength when wet and that are the poorest soils for subgrade. Where laboratory data are available to justify a further breakdown, the A–1, A–2, and A–7 groups are divided as follows: A–1–a, A–1–b; A–2–4, A–2–5, A–2–6, A–2–7; A–7–5, and A–7–6. As additional refinement, the engineering value of a soil material can be indicated by a group index number. Group indexes range from 0 for the best material to 20 or more for the poorest. The estimated AASHO classification, without group index numbers, is given in table 7 for all soils mapped in the survey area.

Soil properties significant in engineering

Several estimated soil properties that are significant in engineering are given in table 7. These estimates are made for typical soil profiles, by layers sufficiently different to have different significance for soil engineering. The estimates are based on field observations made in the course of mapping, on test data for comparable soils in adjacent areas, and on experience with the same kinds of soil in other counties. Engineering test data were not available for the soils of Meigs County.

Depth to bedrock is the distance from the surface of the soil to the upper surface of the rock layer. Bedrock can be limestone, sandstone, or shale in Meigs County.

Soil texture is described in table 7 in the standard terms used by the Department of Agriculture. These terms take into account relative percentages of sand, silt, and clay in soil material that is less than 2 millimeters in diameter. "Loam," for example, is soil material that contains 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the soil contains gravel or other particles coarser than sand, an appropriate modifier is added, as for example, "gravelly loamy sand." "Sand," "silt," "clay," and some of the other terms used in USDA textural classification are defined in the Glossary of this soil survey.

Permeability is that quality of a soil that enables it to transmit water or air. It is estimated for uncompacted soil material. The estimates are based on the structure, texture, and consistence of the soil and on field observations and limited laboratory data.

Available water capacity is the ability of soils to hold water for use by most plants. It is the amount of water held in the soil between about one-third atmosphere of tension and 15 atmosheres of tension. The estimate of available water capacity for most of the soils is based on laboratory data. For a few, the estimates are based on data for similar soils.

Reaction is the degree of acidity or alkalinity of a soil, expressed in pH values. The pH value and terms used to describe soil reaction are explained in the Glossary. Most soils in Meigs County have some degree of acidity.

Shrink-swell potential indicates the volume change to be expected in soil material as a result of a change in moisture content. It is estimated primarily on the basis of the amount and kind of clay in a soil. In general, a soil classified as CH and A–7 has a high shrink-swell potential. Soils that have a low shrink-swell potential are clean sand and gravel (single grain) and most other nonplastic to slightly plastic soils. Shrinking and swelling of soils causes much damage to building foundations, roads, and other structures. A *high* shrink-swell potentiol indicates a hazard to the maintenance of structures built in, on, or with material having this rating.

Most soils in the survey area are deep enough over a seasonal high water table that this generally does not affect their use. The Beason, Dowellton, Dunning, Lobelville, and Newark soils, however, have a seasonal high water table at a depth of less than 18 inches, and the Lindside and Whitwell soils have it at a depth of 24 inches.

Engineering interpretations

Soil features generally are not apparent to an engineer unless he has access to the results of a field investigation. Table 8 shows the suitability of each soil in the county as a source of topsoil and road fill and lists the soil features that affect highway location and soil and water conservation.

The rating of the soils as a source of topsoil generally refers to the uppermost 3 feet of the soil, which consists of a mixture of the original surface layer and the subsoil. The original surface layer of most of the soils is not more than 7 inches thick, and skimming off this thin layer is not practical for the purpose of obtaining topsoil.

The materials most desirable as road fill are generally coarse grained and easily drained, but such materials are scarce in Meigs County. The cherty soils of the Fullerton and Bodine series, which occur throughout the county on high hills, are good to poor sources. Soils in the Ennis, Lobelville, Minvale, and Tarklin series are fair to good but are not so extensive as Fullerton and Bodine soils.

478-383—74——5

TABLE 7.—*Estimated soil properties*

[The symbol

Soil series and map symbols	Depth to bedrock	Depth from surface	Classification		
			USDA texture	Unified	AASHO
	Feet	*Inches*			
Beason: Be	8+	0–9	Silt loam	ML	A–4
		9–15	Silty clay loam	MH or CL	A–7, A–6
		15–60	Clay	MH or CL	A–6, A–7
Bodine: BoD, BoE	8+	0–32	Cherty silt loam	GM or ML	A–2, A–4
		32–60	Cherty silty clay loam	GM or GC	A–2 or A–4
Capshaw: CaB, CaC2	4–8	0–8	Silt loam	ML or CL	A–4
		8–26	Silty clay loam	CL or MH	A–6 or A–7
		26–50	Clay	MH	A–7
Chagrin: Ch	4–8+	0–24	Silt loam	ML or ML–CL	A–4
		24–50	Loam	ML or ML–CL	A–4
Colbert:					
ClC	2–4	0–6	Silt loam	CL	A–4 or A–6
		6–20	Clay	MH–CH or CH	A–7
		20–30	Clay	MH–CH or CH	A–7
CoC3	2–4	0–6	Silty clay	MH	A–7
		6–14	Clay	MH–CH or CH	A–7
		14–24	Clay	MH–CH or CH	A–7
Conasauga: CsC	2–4	0–7	Silt loam	ML or CL	A–4 or A–6
		7–36	Silty clay	MH	A–7
		36–40	Silty clay	MH	A–7
Decatur:					
DaB2, DaC2, DaD2, DcC3, DcD3	6–8+	0–6	Silt loam	CL	A–6
		6–10	Silty clay loam	CL	A–6
		10–60	Clay	CL or MH	A–7
DbC2, DbD2, DdD2	6–8+	0–8	Gravelly silt loam	CL	A–7
		8–60	Gravelly clay	CL or MH	A–7
Dowellton: Do	2–5	0–12	Silt loam	ML	A–4
		12–20	Silty clay loam	CL or MH–CH	A–6 or A–7
		20–50	Silty clay	CH or MH–CH	A–7
		50–55	Silty clay	CH or MH–CH	A–7
Dunning: Du	4–8+	0–7	Silty clay loam	CL	A–6
		7–60	Clay	MH or MH–CH	A–7
Egam: Eg	4–8+	0–34	Silty clay loam	CL	A–6
		34–50	Silty clay	MH or CL	A–7
		50–66	Silty clay loam	CL	A–6
Emory: Em	5–8+	0–38	Silt loam	ML	A–4
		38–50	Silty clay loam	ML or CL	A–6
Ennis:					
En	5–8+	0–50	Silt loam	ML or CL	A–4 or A–6
Eo	5–8+	0–50	Cherty silt loam	ML, CL or GM	A–4
Etowah:					
EsB, EsC	6–8+	0–8	Silt loam	ML or CL	A–4
		8–60	Silty clay loam	CL or MH	A–6 or A–7
EtB, EtC	6–8+	0–8	Gravelly silt loam	ML, CL or GM	A–4
		8–60	Gravelly silty clay loam	CL or MH	A–6 or A–7
Fullerton:					
FaC, FaD	8+	0–8	Silt loam	ML or CL	A–4
		8–18	Silty clay loam	CL	A–6
		18–60	Clay	MH	A–7
FcC, FcD, FcE, FcF	8+	0–15	Cherty silt loam	ML or CL	A–4
		15–19	Cherty silty clay loam	CL	A–6
		19–60	Cherty clay	MH	A–7
FdD3, FdE3	8+	0–10	Cherty silty clay loam	CL	A–6
		10–60	Cherty clay	MH	A–7

See footnotes at end of table

significant to engineering

<means less than]

Percentage passing sieve [1]				Permeability	Available water capacity	Reaction [2]	Shrink-swell potential
No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)	*In./hr.*	*In./in. of soil*	*pH value*	
95–100	95–100	85–95	85–95	0. 63–2. 0	0. 18	4. 5–5. 5	Low.
95–100	90–100	90–95	85–95	0. 20–0. 63	. 14	4. 5–5. 5	Moderate.
95–100	90–100	85–95	75–95	0. 20–0. 63	. 14	4. 5–5. 5	Moderate.
20–65	15–50	10–40	10–35	6. 3–20. 0	. 10	4. 5–5. 0	Low.
20–65	15–45	15–40	10–40	6. 3–20. 0	. 10	4. 5–5. 0	Low.
90–100	85–100	85–95	80–95	0. 63–2. 0	. 18	5. 1–6. 0	Low.
95–100	90–100	85–95	85–95	0. 63–2. 0	. 17	5. 1–5. 5	Low.
90–100	85–100	80–90	75–95	0. 06–0. 20	. 16	5. 1–6. 5	Moderate.
95–100	85–100	70–90	60–80	0. 63–2. 0	. 20	5. 6–6. 5	Low.
95–100	85–100	70–90	60–80	0. 63–2. 0	. 20	5. 6–6. 5	Low.
95–100	90–100	80–90	70–95	0. 63–2. 0	. 16	5. 1–5. 5	Low.
95–100	90–100	85–100	75–100	<0. 06	. 12	5. 1–5. 5	High.
95–100	90–100	85–100	75–100	<0. 06	. 12	6. 6–7. 8	High.
95–100	90–100	85–100	75–100	0. 06–0. 20	. 13	5. 1–5. 5	Moderate.
95–100	90–100	85–100	75–100	<0. 06	. 12	5. 1–5. 5	High.
95–100	90–100	85–100	75–100	<0. 06	. 12	6. 6–7. 8	High.
95–100	90–100	80–95	70–95	0. 20–0. 63	. 16	5. 1–5. 5	Low.
95–100	90–100	85–100	75–100	0. 06–0. 20	. 13	5. 1–5. 5	Moderate.
95–100	90–100	85–100	75–100	0. 06–0. 20	. 13	5. 6–7. 8	Moderate.
95–100	95–100	85–95	70–90	0. 63–2. 0	. 20	4. 5–5. 5	Low.
95–100	95–100	85–95	70–90	0. 63–2. 0	. 20	4. 5–5. 5	Low.
95–100	95–100	90–95	75–95	0. 63–2. 0	. 16	4. 5–5. 5	Moderate.
60–80	55–75	50–75	50–70	0. 63–2. 0	. 16	4. 5–5. 5	Low.
65–80	60–75	55–70	50–65	0. 63–2. 0	. 14	4. 5–5. 5	Moderate.
95–100	90–100	85–95	75–95	0. 2–0. 63	. 19	5. 1–6. 0	Low.
95–100	95–100	85–100	80–95	0. 06–0. 20	. 15	5. 1–6. 0	Moderate.
95–100	95–100	90–95	80–95	0. 06–0. 20	. 12	5. 1–6. 0	High.
85–90	85–90	80–85	70–85	0. 06–0. 20	. 12	6. 1–7. 3	High.
95–100	95–100	90–95	85–95	0. 2–0. 63	. 16	6. 1–7. 3	Moderate.
95–100	95–100	90–95	80–95	0. 06–0. 20	. 14	6. 1–7. 3	Moderate.
95–100	95–100	90–95	85–95	0. 2–0. 63	. 18	5. 6–6. 5	Moderate.
95–100	95–100	85–95	75–100	0. 2–0. 63	. 15	5. 6–6. 5	Moderate.
95–100	95–100	90–95	85–95	0. 2–0. 63	. 18	5. 6–6. 5	Moderate.
95–100	90–100	90–95	85–95	2. 0–6. 3	. 19	5. 1–6. 0	Low.
95–100	95–100	85–95	80–95	2. 0–6. 3	. 18	5. 1–6. 0	Low.
85–95	75–90	65–80	60–75	2. 0–6. 3	. 18	5. 1–5. 5	Low.
65–80	55–75	50–75	45–70	2. 0–6. 3	. 14	5. 1–5. 5	Low.
95–100	90–100	85–95	75–90	0. 63–2. 0	. 20	4. 5–5. 5	Low.
90–100	85–95	80–90	75–85	0. 63–2. 0	. 17	4. 5–5. 5	Moderate.
65–85	55–75	50–65	45–60	0. 63–2. 0	. 16	4. 5–5. 5	Low.
65–85	55–75	50–65	50–60	0. 63–2. 0	. 13	4. 5–5. 5	Low.
90–100	85–95	75–85	65–75	0. 63–2. 0	. 20	4. 5–5. 5	Low.
95–100	90–100	85–95	80–90	0. 63–2. 0	. 16	4. 5–5. 5	Low.
95–100	90–100	85–95	80–90	0. 63–2. 0	. 14	4. 5–5. 5	Moderate.
65–80	60–75	55–70	50–65	0. 63–2. 0	. 13	4. 5–5. 5	Low.
65–80	60–75	55–70	50–65	0. 63–2. 0	. 12	4. 5–5. 5	Low.
65–80	60–75	55–70	50–65	0. 63–2. 0	. 11	4. 5–5. 5	Moderate.
65–80	60–75	55–70	50–60	0. 63–2. 0	. 10	4. 5–5. 5	Low.
65–80	60–75	55–70	50–60	0. 63–2. 0	. 10	4. 5–5. 5	Moderate.

TABLE 7.—*Estimated soil properties*

Soil series and map symbols	Depth to bedrock	Depth from surface	Classification		
			USDA texture	Unified	AASHO
	Feet	*Inches*			
Gullied land: Gu, Gv. Properties too variable for valid estimates. Onsite investigation required.					
Holston:					
HoB, HoC	5–8	0–15	Loam	ML	A–4
		15–60	Clay loam	CL	A–6
HsC	5–8	0–18	Gravelly loam	ML or GM	A–4
		18–60	Gravelly clay loam	CL or GM	A–4 or A–6
Humphreys: HuB	6–8+	0–32	Silt loam	ML or CL	A–4
		32–66	Loam	CL or ML	A–4
Lehew: LeD, LeF	2–3	0–34	Channery loam	GM	A–2
Lindside: Ln	5–8+	0–32	Silt loam	ML or CL	A–4 or A–6
		32–50	Silty clay loam	MH or CL	A–6
Litz:					
LsD, LsE	3–8	0–7	Silt loam	GM, ML, or CL	A–4
		7–30	Shaly silty clay loam	GM, GC, or CL	A–6 or A–2
LtD3	3–8	0–25	Shaly silty clay loam	GM, GC, or CL	A–6 or A–2
Lobelville: Lv	5–8+	0–50	Cherty silt loam	ML or CL	A–4
Minvale:					
MnC	6–8+	0–12	Silt loam	ML	A–4
		12–60	Silty clay loam	MH or CL	A–6
MrC, MrD2	6–8+	0–13	Cherty silt loam	ML	A–4
		13–60	Cherty silty clay loam	MH or CL	A–6
Montevallo: MtD, MtE	6–8+	0–24	Shaly silt loam	GM	A–2
Newark: Ne	5–8+	0–34	Silt loam	ML or CL	A–6
		34–55	Loam	ML or CL	A–4
Rock land: Ro. Properties are too variable for valid estimates. Onsite investigation required.					
Sequoia:					
SeB2, SeC2	4–8+	0–7	Silt loam	ML or CL	A–4 or A–6
		7–34	Silty clay	MH	A–7
SkC3	4–8+	0–36	Silty clay	MH	A–7
Shouns:					
SnC, SnD2	5–8+	0–12	Silt loam	ML	A–4
		12–60	Silty clay loam	CL	A–6
SoD3	5–8+	0–50	Silty clay loam	CL	A–6
Staser, coarse subsoil variant: St	8+	0–8	Fine sandy loam	SM or ML	A–4
		8–18	Loam	ML	A–4
		18–60	Fine sandy loam	SM or ML	A–4
Talbott:					
TaB, TaC2, TaD2	2–5	0–5	Silt loam	ML or CL	A–6
		5–42	Clay	MH or MH–CH	A–7
TcD3, TkD	2–5	0–5	Silty clay	MH or MH–CH	A–7
Properties for Rock outcrop in TkD are too variable to estimate.		5–40	Clay	MH or MH–CH	A–7

See footnotes at end of table.

significant to engineering—Continued

Percentage passing sieve [1]				Permeability	Available water capacity	Reaction [2]	Shrink-swell potential
No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)				
				In./hr.	*In./in. of soil*	*pH value*	
85–100	80–100	75–90	70–75	0. 63–2. 0	. 20	5. 1–5. 5	Low.
85–100	80–100	70–95	65–80	0. 63–2. 0	. 18	5. 1–5. 5	Low.
65–80	60–75	55–70	45–60	0. 63–2. 0	. 15	5. 1–5. 5	Low.
65–80	60–75	55–70	45–60	0. 63–2. 0	. 13	5. 1–5. 5	Low.
90–100	80–100	75–90	70–85	0. 63–2. 0	. 20	5. 1–5. 5	Low.
85–100	75–100	70–80	65–85	0. 63–2. 0	. 18	5. 1–5. 5	Low.
30–55	25–50	20–40	15–30	2. 0–6. 3	. 08	4. 5–5. 0	Low.
95–100	90–100	85–95	80–95	0. 63–2. 0	. 20	5. 6–6. 5	Low.
90–100	80–95	70–85	60–80	0. 63–2. 0	. 18	5. 6–6. 5	Low.
80–95	75–90	70–85	60–75	0. 63–2. 0	. 17	4. 5–5. 5	Low.
35–65	25–55	20–50	20–50	0. 2–0. 63	. 08	4. 5–5. 5	Low.
35–65	25–55	20–50	20–50	0. 2–0. 63	. 08	4. 5–5. 5	Low.
65–80	60–75	55–70	55–65	0. 63–2. 0	. 15	5. 1–5. 5	Low.
85–95	75–85	70–85	60–75	2. 0–6. 3	. 20	4. 5–5. 5	Low.
85–95	75–90	70–85	60–75	2. 0–6. 3	. 18	4. 5–5. 5	Low.
65–80	60–75	55–70	55–65	2. 0–6. 3	. 17	4. 5–5. 5	Low.
60–75	55–70	50–65	50–60	2. 0–6. 3	. 14	4. 5–5. 5	Low.
20–45	15–40	10–35	10–30	0. 63–2. 0	. 06	4. 5–5. 0	Low.
95–100	90–100	85–95	85–95	0. 63–2. 0	. 18	5. 6–7. 3	Low.
95–100	90–100	75–85	65–75	0. 63–2. 0	. 18	5. 6–7. 3	Low.
95–100	95–100	90–95	90–95	0. 2–0. 63	. 18	4. 5–5. 5	Low.
95–100	90–100	90–100	85–100	0. 2–0. 63	. 15	4. 5–5. 5	Moderate.
95–100	90–100	90–100	85–100	0. 2–0. 63	. 15	4. 5–5. 5	Moderate.
90–100	80–95	75–90	65–85	0. 63–2. 0	. 19	5. 1–5. 5	Low.
80–100	75–95	70–90	65–85	0. 63–2. 0	. 18	5. 1–5. 5	Low.
80–100	75–95	70–90	65–85	0. 63–2. 0	. 18	5. 1–5. 5	Low.
95–100	95–100	55–70	45–55	2. 0–6. 3	. 18	5. 6–7. 3	Low.
95–100	85–100	65–75	55–70	2. 0–6. 3	. 18	5. 6–7. 3	Low.
95–100	95–100	55–70	40–55	2. 0–6. 3	. 18	5. 6–7. 3	Low.
95–100	95–100	85–95	80–95	0. 63–2. 0	. 18	5. 1–6. 0	Low.
95–100	95–100	90–95	85–95	0. 2–0. 63	. 14	5. 1–7. 3	Moderate.
95–100	95–100	90–100	85–95	0. 2–0. 63	. 14	5. 1–6. 0	Moderate.
95–100	95–100	90–95	85–95	0. 2–0. 63	. 14	5. 1–7. 3	Moderate.

TABLE 7.—*Estimated soil properties*

Soil series and map symbols	Depth to bedrock	Depth from surface	Classification		
			USDA texture	Unified	AASHO
	Feet	*Inches*			
Tarklin:					
TlB	5–8+	0–8	Silt loam	ML	A–4
		8–24	Silt loam	CL	A–6
		24–48	Cherty silty clay loam (fragipan).	CL or GC	A–6
		48–60	Cherty silty clay loam	CL or GC	A–6
TnB, TnC	7–8+	0–8	Cherty silt loam	ML or GM	A–4
		8–24	Cherty silt loam	CL or GM	A–6
		24–48	Cherty silty clay loam	CL or GC	A–6
		48–60	Cherty silty clay loam	CL or GC	A–7
Teas: TsD, TsE	2–3	0–6	Silt loam	ML	A–4
		6–30	Shaly silt loam	GM	A–4 or A–2
Waynesboro:					
WaC, WaD	8+	0–11	Loam	ML	A–4
		11–30	Clay loam	CL	A–6 or A–7
		30–60	Clay	MH	A–7
WgC, WgD, WgE	8+	0–11	Gravelly loam	ML or GM	A–4
		11–30	Gravelly clay loam	CL or GM	A–6
		30–72	Gravelly clay	MH, CL, or GC	A–7
WhD2	8+	0–12	Clay loam	CL	A–6 or A–7
		12–60	Clay	MH	A–7
WkD2	8+	0–15	Gravelly clay loam	CL or GM	A–6
		15–60	Gravelly clay	MH, CL, or GC	A–7
Whitwell: WtB	7–8+	0–52	Loam	ML or CL	A–4
		52–60	Gravelly sandy loam	ML, CL, or SM	A–4, A–2
Wolftever: WvB, WvC2	7–8+	0–8	Silt loam	ML or CL	A–6
		8–66	Silty clay loam	CL	A–7

[1] Material more than 3 inches in diameter is not included in the estimate.

TABLE 8.—*Interpretations of*

Soil series and map symbols	Suitability as source of—		Soil features affecting—
	Topsoil	Road fill	Highway location
Beason: Be	Poor: clayey subsoil; wetness	Poor: traffic-supporting capacity poor.	Moderately clayey subsoil that has moderately slow permeability; some ponding.
Bodine: BoD, BoE	Poor: rock fragments	Good	Steep slopes in most places
Capshaw: CaB, CaC2	Poor: clayey subsoil	Poor: traffic-supporting capacity poor.	Slowly permeable clay below depth of 2 feet.
Chagrin: Ch	Good	Fair: traffic-supporting capacity fair.	Subject to flooding
Colbert: ClC, CoC3	Poor: clayey subsoil	Poor: traffic-supporting capacity poor; high shrink-swell potential.	Limestone rock outcrops; high shrink-swell potential.

significant to engineering—Continued

Percentage passing sieve [1]				Permeability	Available water capacity	Reaction [2]	Shrink-swell potential
No. 4 (4.7 mm.)	No. 10 (2.0 mm.)	No. 40 (0.42 mm.)	No. 200 (0.074 mm.)				
				In./hr.	*In./in. of soil*	*pH value*	
85–95	75–95	75–85	65–80	0. 63–2. 0	. 20	4. 5–5. 5	Low.
85–95	75–95	75–85	65–80	0. 63–2. 0	. 18	4. 5–5. 5	Low.
60–80	55–75	50–75	45–70	0. 06–0. 20	. 16	4. 5–5. 5	Low.
60–75	55–70	50–70	45–65	0. 63–2. 0	. 13	4. 5–5. 5	Low.
60–80	55–75	50–75	45–70	0. 63–2. 0	. 16	4. 5–5. 5	Low.
60–80	55–75	50–75	45–70	0. 63–2. 0	. 15	4. 5–5. 5	Low.
60–80	55–70	50–70	45–65	0. 06–0. 20	. 14	4. 5–5. 5	Low.
60–80	55–70	50–70	45–65	0. 63–2. 0	. 13	4. 5–5. 5	Moderate.
75–85	60–75	60–70	55–70	0. 63–2. 0	. 18	5. 1–5. 5	Low.
45–60	40–55	40–50	35–45	0. 63–2. 0	. 10	5. 1–5. 5	Low.
95–100	80–95	75–85	55–70	0. 63–2. 0	. 19	4. 5–5. 5	Low.
95–100	80–100	75–90	55–75	0. 63–2. 0	. 18	4. 5–5. 5	Low.
95–100	80–95	75–85	55–75	0. 63–2. 0	. 15	4. 5–5. 5	Moderate.
70–80	60–75	55–65	45–60	0. 63–2. 0	. 16	4. 5–5. 5	Low.
70–80	60–75	55–65	45–65	0. 63–2. 0	. 14	4. 5–5. 5	Low.
70–80	60–75	55–65	45–60	0. 63–2. 0	. 12	4. 5–5. 5	Moderate.
95–100	80–100	75–90	55–75	0. 63–2. 0	. 18	4. 5–5. 5	Low.
95–100	80–95	75–85	55–75	0. 63–2. 0	. 15	4. 5–5. 5	Moderate.
70–80	60–75	55–65	45–65	0. 63–2. 0	. 14	4. 5–5. 5	Low.
70–80	60–75	55–65	45–60	0. 63–2. 0	. 12	4. 5–5. 5	Moderate.
95–100	85–100	75–85	55–75	0. 63–2. 0	. 19	5. 1–5. 5	Low.
75–95	60–90	50–65	25–55	0. 63–2. 0	. 12	5. 1–5. 5	Low.
95–100	95–100	90–95	85–95	0. 63–2. 0	. 20	5. 1–5. 5	Low.
95–100	90–100	85–95	85–95	0. 2–0. 63	. 18	5. 1–5. 5	Low.

[2] The pH value was determined before soils were limed.

engineering properties

Soil features affecting—Continued				
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions
Reservoir area	Embankment			
Moderately slow permeability; low risk of seepage.	Fair to poor stability	Subsoil clayey and has moderately slow permeability.	Some ponding; subsoil has moderately slow permeability.	Level or nearly level.
Pervious material; high seepage rate likely unless compacted.	Good stability; many chert fragments.	Excessively drained	Steep slopes in most places; low available water capacity.	Steep slopes in most places.
Slow permeability; low risk of seepage.	Fair stability; lower part of subsoil high in content of clay.	Moderately well drained; subsoil clayey and has slow permeability.	Subsoil clayey and has slow permeability.	High content of clay below depth of 2 feet.
Subject to flooding; high seepage rate likely.	Fair to good stability	Well drained	Subject to flooding	Nearly level.
Bedrock at depth of 2 to 4 feet; some outcrops; very clayey; low risk of seepage.	Poor stability; high shrink-swell potential.	Subsoil has very slow permeability.	Subsoil very clayey and has very slow permeability.	Subsoil plastic and very clayey.

TABLE 8.—*Interpretations of*

Soil series and map symbols	Suitability as source of—		Soil features affecting—
	Topsoil	Road fill	Highway location
Conasauga: CsC	Poor: clayey subsoil	Poor: traffic-supporting capacity poor.	Hard shale rock at a depth of 2 to 4 feet.
Decatur: DaB2, DaC2, DaD2, DbC2, DbD2, DcC3, DcD3, DdD2.	Fair to poor: clayey subsoil; many coarse fragments in places.	Poor: traffic-supporting capacity poor.	Features favorable, except steep slopes in places.
Dowellton: Do	Poor: clayey subsoil; wetness.	Poor: traffic-supporting capacity poor; high shrink-swell potential.	High water table; poor drainage; slow permeability.
Dunning: Du	Poor: clayey subsoil; wetness	Poor: traffic-supporting capacity poor; moderate shrink-swell potential.	Subject to flooding; high shrink-swell potential.
Egam: Eg	Fair to good: clayey subsoil	Poor: traffic-supporting capacity poor.	Some areas subject to flooding
Emory: Em	Good	Poor to fair: traffic-supporting capacity poor to fair.	Features favorable
Ennis: En, Eo	Good to fair; rock fragments	Fair: traffic-supporting capacity fair.	Some areas subject to flooding
Etowah: EsB, EsC, EtB, EtC	Good, except that some areas are gravelly.	Poor to fair: traffic-supporting capacity poor to fair.	Features favorable
Fullerton: FaC, FaD, FcC, FcD, FcE, FcF, FdD3, FdE3.	Poor: clayey subsoil; many areas cherty.	Fair to poor: traffic-supporting capacity fair to poor.	Hilly topography; steep slopes in many places.
Gullied land: Gu, Gv	Poor: shallow depth	Good to poor: shallow; traffic-supporting capacity good to poor.	Bedrock exposed in places; possible slippage on cut slopes.
Holston: HoB, HoC, HsC	Good to poor: rock fragments in many areas.	Fair to good: traffic-supporting capacity fair to good.	Features favorable
Humphreys: HuB	Good	Fair: traffic-supporting capacity fair.	Features favorable
Lehew: LeD, LeF	Poor: rock fragments	Fair: traffic-supporting capacity fair.	Steep slopes; moderately deep to bedrock.
Lindside: Ln	Good	Poor: traffic-supporting capacity poor.	Subject to flooding

engineering properties—Continued

Soil features affecting—Continued				
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions
Reservoir area	Embankment			
Rock at depth of 2 to 4 feet; slow permeability; low risk of seepage.	Poor stability; very clayey subsoil.	Moderately well drained; slow permeability.	Subsoil has slow permeability.	Subsoil very clayey; bedrock at a depth of less than 2 feet in some places.
Excess seepage likely; poor compaction characteristics.	Fair to poor stability	Well drained	Features favorable, except steep slopes in places.	Features favorable, except steep slopes in places.
Slow permeability; low risk of seepage.	Poor stability; clayey subsoil.	Slow permeability	Slow permeability	Nearly level.
Subject to flooding; low risk of seepage.	Poor stability; very clayey.	Slow permeability	Slow permeability; subject to flooding.	Nearly level.
Some areas subject to flooding: low risk of seepage.	Poor stability	Well drained or moderately well drained.	Features favorable; some areas subject to to flooding.	Nearly level.
Moderately rapid permeability; excessive seepage likely.	Fair to poor stability	Well drained	Features favorable	Nearly level.
Moderately rapid permeability; excessive seepage likely; good compaction characteristics.	Features favorable	Well drained	Features favorable, except some areas very cherty and subject to flooding.	Nearly level.
Moderate permeability; excessive seepage likely.	Features favorable	Well drained	Features favorable	Features favorable.
Excessive seepage likely; moderate permeability.	Features favorable	Well drained	Steep slopes in many places.	Features favorable, except steep slopes in many places.
Excessive silting	Soil material variable	Well drained	Features not favorable	Dissected by network of gullies.
Low risk of seepage; good compaction characteristics; bedrock is shale in most places.	Features favorable	Well drained	Features favorable	Features favorable.
Subsoil has moderate permeability; excessive seepage likely; good compaction characteristics.	Features favorable	Well drained	Features favorable	Features favorable.
Rock at a depth of 2 to 3 feet; in places bedrock is cracked and pervious.	Large amount of stones; limited amount of soil material; good stability.	Well drained	Low productivity; low available water capacity; steep slopes.	Moderately deep to rock; steep slopes.
Moderate permeability; subject to flooding; pervious material below depth of 3 feet in places.	Features favorable	Features favorable	Subject to flooding	Nearly level.

TABLE 8.—*Interpretations of*

Soil series and map symbols	Suitability as source of—		Soil features affecting—
	Topsoil	Road fill	Highway location
Litz: LsD, LsE, LtD3	Poor: rock fragments	Poor: traffic-supporting capacity poor.	Soft shale rock at a depth of 2 to 5 feet; hilly topography; steep slopes in places.
Lobelville: Lv	Fair to poor: chert fragments	Fair to good: traffic-supporting capacity fair.	Subject to flooding
Minvale: MnC, MrC, MrD2	Fair to poor: chert fragments in some areas.	Good	Features favorable
Montevallo: MtD, MtE	Poor: rock fragments	Fair to poor: traffic-supporting capacity fair; shallow depth.	Shallow to soft shale; hilly topography; steep slopes in places.
Newark: Ne	Poor: wetness	Poor: traffic-supporting capacity poor.	Subject to flooding
Rock land: Ro	Poor: rocks; clayey soil	Poor: rocks; traffic-supporting capacity poor.	Rock outcrops
Sequoia: SeB2, SeC2, SkC3	Poor: clayey subsoil	Fair to poor: traffic-supporting capacity fair to poor.	Features favorable
Shouns: SnC, SnD2, SoD3	Good	Good	Features favorable
Staser, coarse subsoil variant: St.	Good	Fair: poorly graded	Features favorable
Talbott: TaB, TaC2, TaD2, TcD3, TkD.	Poor: clayey subsoil	Poor: traffic-supporting capacity poor; moderate shrink-swell potential.	Some rock outcrops; bedrock at depth of 2 to 5 feet.
Tarklin: TlB, TnB, TnC	Poor: fragipan	Fair: traffic-supporting capacity fair.	Perched water table above fragipan.
Teas: TsD, TsE	Poor: rock fragments	Fair: moderately shallow depth.	Hilly; bedrock at a depth of 2 to 3 feet.
Waynesboro: WaC, WaD, WgC, WgD, WgE, WhD2, WkD2.	Good to fair: rock fragments in some areas.	Fair: traffic-supporting capacity fair.	Features favorable, except steep slopes in places.
Whitwell: WtB	Good	Fair: traffic-supporting capacity fair.	Some areas subject to flooding
Wolftever: WvB, WvC2	Fair: texture	Poor: traffic-supporting capacity poor.	Some areas subject to flooding

engineering properties—Continued

Soil features affecting—Continued				
Farm ponds		Agricultural drainage	Irrigation	Terraces and diversions
Reservoir area	Embankment			
Two to 5 feet to shale rock; low risk of seepage.	Very shaly material; limited amount of soil material.	Well drained	Low available water capacity; shallow root zone; steep slopes in places.	Shallow to soft shaly material; steep slopes in places.
Moderate permeability; flooding; pervious material below 3 feet in many places; high risk of excessive seepage.	Features favorable	Features favorable	Large amount of chert fragments; subject to flooding.	Nearly level.
Moderately rapid permeability; excess seepage; good compaction characteristics.	Features favorable	Well drained	Features favorable	Features favorable.
Shallow to soft shale; shale has slow permeability; low risk of seepage.	Limited amount of shaly soil material.	Well drained	Very low available water capacity; steep slopes in places.	Very shaly material and shallow to rock; steep slopes in places.
Moderate permeability; subject to flooding; pervious layers below a depth of 3 feet in places.	Fair to poor stability	Features favorable	Subject to flooding	Nearly level.
Rock outcrops	Small amount of soil	Well drained	Low productivity	Rocks.
Low risk of seepage; moderately slow permeability in subsoil.	Fair stability	Well drained	Moderately slow permeability.	Clayey and shaly subsoil.
Moderate permeability	Features favorable	Well drained	Features favorable	Features favorable, except strong slopes in places.
Pervious sandy subsoil; excess seepage likely.	Fair stability	Well drained	Features favorable	Nearly level.
Bedrock at depth of 2 to 5 feet.	Poor stability	Well drained	Low available water capacity; clayey subsoil.	Rock outcrops and clayey subsoil.
Low risk of seepage to depth of 4 feet.	Fair stability	Slowly permeable subsoil; fragipan.	Slow permeability; fragipan.	Fragipan at a depth of 2 feet.
Bedrock at depth of 2 to 4 feet.	Limited amount of shaly soil material.	Well drained	Low available water capacity; steep slopes in places.	Bedrock at depth of 2 to 3 feet; steep slopes in places.
Moderate permeability; excess seepage likely.	Fair stability	Well drained	Features favorable, except steep slopes in places.	Features favorable, except steep slopes in places.
Pervious subsoil in places at a depth below 3 feet; moderate permeability.	Fair stability	Features favorable	Some areas subject to flooding.	Nearly level in places.
Features favorable	Fair to poor stability	Moderately slow permeability.	Some areas subject to flooding.	Nearly level in places.

Chert gravel can be used economically for secondary and county roads, but ordinarily it is not durable enough to be used in concrete structures or for base materials in primary roads. Crushed limestone is much more satisfactory, and limestone is plentiful in Meigs County. On many roads chert can be used as a subbase under the crushed limestone, to reduce the cost. There are no known sources of sand in Meigs County.

In selecting locations for highways, an engineer needs to know the depth to bedrock and the kind of rock, so that he can ascertain how difficult excavation will be. The engineer needs to investigate the likelihood of slides and of seepage along or through the bedrock. The engineer needs to consider the presence of poor material within or slightly below the subgrade. For example, a layer of highly plastic clay impedes internal drainage and provides a poor foundation for roads. In some places the layer of clay can be cut out before pavement is laid. In low, flat, or poorly drained areas, where removal of the clay is not feasible, an embankment is needed so that the pavement can be laid well above the clay layer. Poor drainage, a high water table, and flooding also make embankments necessary. Interceptor ditches or underdrains are needed where there is surface seepage, which is common in deposits of local alluvium at the base of slopes. Slumping or sliding may result from seepage in the backslopes or cuts. Boulders, flagstones, and stones are likely to cause grading problems.

In most of Meigs County, earthwork is difficult during prolonged wet periods. It is possible to excavate, haul, and compact the better drained, coarse-grained soils, but silty and clayey soils may absorb so much water during wet periods that they cannot readily be drained to the moisture content most favorable for proper compaction.

Some features that affect the construction of farm ponds are a permeable substratum, cavernous bedrock, and insufficient embankment material. Stored water may be lost if ponds are constructed on soils that have a permeable substratum or that are underlain by cavernous bedrock. In soils that are shallow over bedrock only a small amount of fill material is available, and if the bedrock is cavernous limestone, the caverns are close to the surface.

Agricultural drainage, open ditches or tile drains, are needed in some instances in Meigs County. Some soil features affecting the feasibility and kind of drainage include permeability, amount of clay, and fragipans. The slowly permeable soils, such as the Dunning soils, and soils that have a fragipan, such as the Tarklin soils, can be drained by open ditches. Tile drains do not work well in these soils because of slow permeability but they can be used to drain the more permeable Lindside and Newark soils.

Irrigation is used very little in Meigs County. Among the soil features adversely affecting irrigation practices are slow permeability, shallow depth of root zone, low productivity, low available water capacity, chertiness, steep slopes, and flooding.

Terraces and diversions are engineering practices designed to intercept and slowly remove surplus runoff and protect the soil downslope. These terraces and diversions may be embankments, ridges, or deep channels. Some soil features affecting their construction include shallow depth to rock, high clay content of subsoil, steep or level slopes, and hardness of rock.

Use of the Soils for Community Development

This subsection interprets the soil properties that affect the use of the soils of the county as sites for playgrounds, camp areas, picnic areas, and as disposal fields for septic tank systems. Table 9 shows the degree and kinds of limitations of the soils for such uses. The degree of limitation is shown first, followed by the main limiting feature.

TABLE 9.—*Degree and kind of soil limitations for recreational uses*

[The main soil limitation is shown first, following the degree of limitation]

Soil series and map symbol	Playgrounds	Camp areas	Picnic areas	Septic tank disposal fields
Beason: Be	Moderate: wetness	Moderate: wetness	Moderate: wetness	Severe: slow percolation; high water table.
Bodine:				
BoD	Severe: slope, rock fragments.	Moderate and severe: slope and rock fragments.	Moderate and severe: slope and rock fragments.	Slight and moderate: slope.
BoE	Severe: slope	Severe: slope	Severe: slope	Severe: slope.
Capshaw:				
CaB	Moderate: slope; slow permeability.	Moderate: slow permeability.	Slight	Severe: slow percolation.
CaC2	Severe: slope	Moderate: slow permeability.	Slight and moderate: slope.	Severe: slow percolation.
Chagrin: Ch	Moderate: subject to flooding.	Severe: subject to flooding.	Moderate: subject to flooding.	Severe where subject to flooding, slight in other places.

TABLE 9.—*Degree and kind of soil limitations for recreational uses*—Continued

Soil series and map symbol	Playgrounds	Camp areas	Picnic areas	Septic tank disposal fields
Colbert:				
ClC	Severe: very slow permeability; slope; plastic clayey subsoil.	Severe: very slow permeability.	Slight and moderate: slope.	Severe: slow percolation; moderately shallow depth to rock.
CoC3	Severe: very slow permeability; slope; clayey texture.	Severe: clayey texture; very slow permeability.	Severe: clayey texture.	Severe: slow percolation; moderately shallow depth to rock.
Conasauga: CsC	Severe: slow permeability; slope; plastic clayey subsoil.	Moderate: slow permeability.	Slight and moderate: slope.	Severe: slow percolation; moderately shallow depth to rock.
Decatur:				
DaB2	Moderate: slope	Slight	Slight	Slight.
DaC2	Severe: slope	Slight	Slight	Slight.
DaD2	Severe: slope	Severe: slope	Severe where slopes are more than 15 percent, moderate where slopes are less than 15 percent.	Moderate and severe: slope.
DbC2	Severe: slope; rock fragments.	Slight and moderate: rock fragments.	Slight and moderate: rock fragments.	Slight.
DbD2	Severe: slope	Severe where slopes are more than 15 percent; rock fragments; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; rock fragments; moderate where slopes are less than 15 percent.	Moderate: slope.
DcC3	Severe: slope	Moderate: silty clay loam texture.	Moderate: silty clay loam texture.	Slight.
DcD3	Severe: slope	Severe where slopes are more than 15 percent; silty clay loam texture; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; silty clay loam texture; moderate where slopes are less than 15 percent.	Moderate and severe: slope.
DdD2	Severe: slope	Severe where slopes are more than 15 percent; rock fragments; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; rock fragments; moderate where slopes are less than 15 percent.	Moderate: slope.
Dowellton: Do	Severe: wetness	Severe: wetness	Severe: wetness	Severe: slow percolation.
Dunning: Du	Severe: wetness	Severe: wetness; flooding.	Severe: wetness	Severe: flooding; slow percolation.
Egam: Eg	Moderate: moderately slow permeability; silty clay loam texture.	Moderate where soils are subject to flooding; slight in other areas.	Slight	Severe where soils are subject to flooding; slight in other areas.
Emory: Em	Slight	Slight	Slight	Slight.
Ennis:				
En	Slight	Severe where soils are subject to flooding; slight in other areas.	Slight	Severe where soils are subject to flooding; slight in other areas.
Eo	Moderate: rock fragments.	Severe where soils are subject to flooding; slight in other areas.	Slight	Severe where soils are subject to flooding; slight in other areas.
Etowah:				
EsB	Moderate: slope	Slight	Slight	Slight.
EsC	Severe: slope	Slight	Slight	Slight.
EtB	Severe: rock fragments	Moderate: rock fragments.	Slight	Slight.
EtC	Severe: slope; rock fragments.	Moderate: rock fragments.	Slight	Slight.

TABLE 9.—*Degree and kind of soil limitations for recreational uses*—Continued

Soil series and map symbol	Playgrounds	Camp areas	Picnic areas	Septic tank disposal fields
Fullerton:				
FaC	Severe: slope	Slight	Slight	Slight.
FaD	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.
FcC	Severe: slope; rock fragments.	Slight	Slight	Slight.
FcD	Severe: slope; rock fragments.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.
FcE	Severe: slope; rock fragments.	Severe: slope	Severe: slope	Severe: slope.
FcF	Severe: slope; rock fragments.	Severe: slope	Severe: slope	Severe: slope.
FdD3	Severe: slope; rock fragments.	Severe where slopes are more than 15 percent; cherty silty clay loam; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; cherty silty clay loam; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.
FdE3	Severe: slope; rock fragments.	Severe: slope	Severe: slope	Severe: slope.
Gullied land:				
Gu	Severe: gullies; slope	Severe: gullies; slope	Severe: gullies; slope	Severe: slope; gullies.
Gv	Severe: gullies; slope	Severe: gullies; slope	Severe: gullies; slope	Severe: slow percolation; gullies.
Holston:				
HoB	Moderate: slope	Slight	Slight	Slight.
HoC	Severe: slope	Slight and moderate: slope.	Slight	Slight.
HsC	Severe: slope; rock fragments.	Moderate: rock fragments.	Slight	Slight.
Humphreys: HuB	Moderate: slope	Slight	Slight	Slight.
Lehew:				
LeD	Severe: slope	Severe: slope; rock fragments.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe: slope; moderately shallow depth to rock.
LeF	Severe: slope	Severe: slope; rock fragments.	Severe: slope	Severe: slope; moderately shallow depth to rock.
Lindside: Ln	Moderate where soil is subject to flooding; slight in other areas.	Severe: subject to flooding.	Moderate: subject to flooding.	Severe: subject to flooding; seasonal high water table.
Litz:				
LsD	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe: slow percolation; moderately deep.
LsE	Severe: slope	Severe: slope	Severe: slope	Severe: slope; slow percolation; moderately deep.
LtD3	Severe: slope; rock fragments.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent; rock fragments.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe: slow percolation; moderately deep.

TABLE 9.—*Degree and kind of soil limitations for recreational uses*—Continued

Soil series and map symbol	Playgrounds	Camp areas	Picnic areas	Septic tank disposal fields
Lobelville: Lv	Moderate: subject to flooding; rock fragments.	Severe where soil is subject to flooding; slight in other areas.	Moderate where soil is subject to flooding; slight in other areas.	Severe: subject to flooding; seasonal high water table.
Minvale:				
MnC	Severe: slope	Slight	Slight	Slight.
MrC	Severe: slope	Slight	Slight	Slight.
MrD2	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.
Montevallo: MtD, MtE	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe: slow percolation; shallow depth to rock.
Newark: Ne	Moderate: wetness	Severe: subject to flooding.	Moderate: wetness; subject to flooding.	Severe: subject to flooding; seasonal high water table.
Rock land: Ro	Severe: rocks; slope	Severe: rocks; slope	Severe: rocks; slope	Severe: rocks; slow percolation.
Sequoia:				
SeB2	Moderate: slope; moderately slow permeability.	Moderate: moderately slow permeability.	Slight	Severe: slow percolation.
SeC2	Severe: slope	Moderate: moderately slow permeability.	Slight	Severe: slow percolation.
SkC3	Severe: clayey texture; slope.	Severe: clayey texture	Severe: clayey texture	Severe: slow percolation.
Shouns:				
SnC	Severe: slope	Slight	Slight	Slight.
SnD2	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.
SoD3	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.
Staser, coarse subsoil variant: St.	Slight	Slight	Slight	Slight.
Talbott:				
TaB	Moderate: slope	Moderate: moderately slow permeability.	Slight	Severe: slow percolation.
TaC2	Severe: slope	Moderate: moderately slow permeability.	Slight	Severe: slow percolation.
TaD2	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent; moderately slow permeability.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe: slow percolation.
TcD3	Severe: slope; clayey texture.	Severe: clayey texture	Severe: clayey texture	Severe: slow percolation.
TkD	Severe: rocks; slope	Severe: rocks	Severe: rocks	Severe: slow percolation; shallow depth to rock.

TABLE 9.—*Degree and kind of soil limitations for recreational uses*—Continued

Soil series and map symbol	Playgrounds	Camp areas	Picnic areas	Septic tank disposal fields
Tarklin:				
TlB	Moderate: slow permeability; slope.	Moderate: slow permeability.	Slight	Severe: slow percolation.
TnB	Moderate: slow permeability; slope; rock fragments.	Moderate: slow permeability.	Slight	Severe: slow percolation.
TnC	Severe: slope	Moderate: slow permeability.	Slight	Severe: slow percolation.
Teas:				
TsD	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe: moderately shallow depth to rock.
TsE	Severe: slope	Severe: slope	Severe: slope	Severe: slope; moderately shallow depth to rock.
Waynesboro:				
WaC	Severe: slope	Slight	Slight	Slight.
WaD	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.
WgC	Severe: slope; rock fragments.	Moderate: rock fragments.	Slight	Slight.
WgD	Severe: slope; rock fragments.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent; rock fragments.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.
WgE	Severe: slope; rock fragments.	Severe: slope	Severe: slope	Severe: slope.
WhD2	Severe: slope	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent; clay loam texture.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent; clay loam texture.	Moderate where slopes are more than 15 percent; slight where slopes are less than 15 percent.
WkD2	Severe: slope; rock fragments.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent; rock fragments.	Severe where slopes are more than 15 percent; moderate where slopes are less than 15 percent.	Moderate where slopes are more than 15 percent; slight where slopes are less than 15 percent.
Whitwell: WtB	Slight and moderate; slope.	Slight	Slight	Severe: seasonal high water table.
Wolftever:				
WvB	Moderate: moderately slow permeability.	Moderate: moderately slow permeability.	Slight	Severe: slow percolation.
WvC2	Severe: slope	Moderate: moderately slow permeability.	Slight	Severe: slow percolation.

Soils with *slight* limitations are suited to the intended use and are considered to be good sites. Soils with *moderate* limitations are fairly suited to the intended use, but require some modification or some change in design to overcome the somewhat unfavorable soil properties shown after the rating. Soils with *severe* limitations are poorly suited to the intended use and, if used, require major soil modifications or adjustments in design to overcome the highly unfavorable soil properties.

Playgrounds include community and school playgrounds, athletic fields, and other intensive play areas subject to heavy foot traffic. Sites for this use should have a nearly level surface, good drainage, freedom from flooding during periods of use, and soil textures and consistence that provide a firm surface.

Camp areas are those places to be used intensively for tents and small camp trailers and the accompanying activities of outdoor living. These areas are subject to heavy foot traffic and limited vehicular traffic. The best soils for this use have slight to moderate slopes, good drainage, freedom from flooding during periods of use, and a surface texture that is firm even after rains.

Picnic areas are park-type accommodations where a meal is taken out of doors. These areas are subject to heavy foot traffic, but most vehicular traffic is confined to access roads. Preparation of an area for picnic site consists of leveling sites for tables and fireplaces and building access roads. Soil properties important to this use are texture, drainage (including freedom from flooding), slope, and rockiness. Freedom from dust and mud are other important requirements for picnic areas.

Soil properties important in evaluating sites for septic tank disposal fields are percolation rate, flood hazard, depth to water table, depth to rock, and slope. Soils that are subject to flooding or that have a percolation rate slower than about 75 minutes per inch have severe limitations. Slopes greater than about 15 percent are likely to allow the effluent to move laterally to the ground surface although the percolation rate may be favorable. For adequate filtration, depth to rock should be more than 6 feet.

Formation and Classification of the Soils

This section discusses briefly the land forms and the factors responsible for differences and similarities among the soils in Meigs County. It also briefly explains the current system of classifying soils into categories broader than the series classification.

Formation of the Soils

In Meigs County there is a succession of parallel ridges and narrow intervening valleys that extend through the county in a southwest to northeast direction. Within these ridge and valley landscapes there are a large number of different kinds of soils. This section discusses the formation of the ridges and the valleys, and the kinds of soils within them. Because the ridge and valley areas differ in regard to kinds of soils, it is appropriate and convenient to discuss soil formation by the four major kinds of landscapes in the county. These are cherty limestone ridges, sandstone and shale ridges, limestone valleys, and shale valleys.

Cherty limestone ridges: These ridges, known locally as McMinn Ridge, Blalock Ridge, and Mount Carmel Ridge, make up nearly half of the county. They are about 2 to 3 miles wide, rise to about 300 feet above the average level of the adjoining valleys, and are deeply dissected by drainageways or hollows. These ridges formed because the cherty limestone rocks of the ridges are more resistant than the rocks in the valleys. Furthermore, this rock formation, when weathered or decayed, leaves a large volume of soil material and hard rock (chert) fragments. These fragments decompose very slowly, and make up nearly half of the soil volume in some places on the ridges. There is a thick layer of soil, more than 8 feet, that now covers the limestone bedrock, and this acts to slow the weathering of the rock.

The soils on these ridges reflect intense leaching over a long period of time. This process is promoted by the warm temperate climate that permits the leaching of soluble materials, and the downward movement of fine particles, such as clay, in the soil profile. This process goes on year round because the soil is seldom frozen and then to depths of only 3 or 4 inches. Thus, all of the soils are very strongly acid, low in fertility, and low in content of organic matter. They have a silty surface layer and a moderate to large amount of clay in the subsoil. It can be said that these soils are very old and that the climate and vegetation have made nearly maximum impressions on them. Differences among the soils in the cherty ridges or hills can be attributed largely to the amount of insoluble material (chert fragments) in the rock from which they formed.

Fullerton soils, which are by far the most extensive in this area, contain less chert, have more clay in the subsoil, and have more reddish color than the nearby Bodine soils. The few tracts of dark-red Decatur and Waynesboro soils, scattered throughout the ridges formed in sediment that was deposited by rivers long ago. These soils lack the chert fragments common to the Fullerton and Bodine soils, and they contain few to many rounded pebbles and cobblestones. Soils that are of three different ages, and that formed in material that drifted downslope, can be seen along the bases of the ridges. These are Minvale soils that are considered old, have distinct horizons, and have formed on foot slopes; Humphreys soils that are on low terraces and have moderately expressed soil layers; and Ennis and Lobelville soils that are on narrow strips of bottom land and are relatively young soils, as is evident from their weakly expressed soil layers.

Sandstone and shale ridges: Ridges underlain by sandstone and shale make up roughly a fifth of the county. No Pone Ridge is the largest. It is ½ mile to 2 miles wide and is about 300 feet higher than the adjacent valleys. The bedrock consists of interbedded sandstone and shale and of shale without the sandstone seams. In the center, or crests, of the ridges, fine-grained sandstone is dominant. This rock weathers very slowly.

An important process in understanding soil formation on these ridges is called "mass wasting of slopes." This process involves the movement of soil material downslope and its accumulation at a lower level to form a new land surface. This process is more evident on the sandstone and shale ridges than it is on the cherty limestone ridges because the loamy soil material moves easily, when wet, on the smooth, slick surface of the shale bedrock. Thus, the forming of soil by rock decay makes only small gains on removal by downslope drift. Consequently, the soils on the side slopes of the ridges are only about 1 to 3 feet thick over soft or hard rock, and they have weakly expressed soil layers. Examples are Lehew and Montevallo soils which differ from each other mostly in the amount of sandstone in the parent rock.

Shouns soils formed in the deep colluvial material at the base of slopes, and they have moderately to strongly expressed soil layers. Differences between Shouns soils and those on the upland slopes can be attributed mostly to the length of time the soil has been in place, because other factors, such as climate, vegetation, and parent materials, are relatively uniform.

Limestone valleys: Gently to strongly rolling soils in limestone valleys make up roughly a fifth of the county. Most of the acreage is in Goodfield Valley, a valley 1 mile wide that passes through the approximate center of the county. Smaller discontinuous valleys are along the northwestern side of the county. Soils in these valleys are underlain by clayey limestone that weathers more rapidly than the rocks underlying the ridges. Such areas drop to a lower level than those underlain by cherty limestone, sandstone, or shale. Furthermore, the clayey limestone does not contain cherty material. When these rocks weather and disintegrate, they leave only a thin mantle of clay, and many feet of rock are required to form a few inches of soil material. The soil mantle over the area is mostly less than 5 feet thick, and bare rock is exposed in many places. Since the bedrock in the valleys is less deeply covered and protected with soil material than that on the cherty ridges, it is reasonable to assume that the rate of rock weathering is proceeding faster in the limestone valleys than it is on the cherty limestone ridges.

Generally, the soils in the limestone valleys are less deeply leached and are less acid than those on the cherty ridges. These soils in the valleys are mostly strongly acid in the upper part, but they become less acid and higher in fertility near bedrock. They are generally medium acid to neutral in reaction in the 5- to 10-inch layer just above bedrock. This is believed to be the result of the slower permeability of the soil at that depth and because there are fewer cracks and caverns in the clayey limestone rock. Differences in the soils in the limestone valleys are mainly the result of topography, differences in drainage, and differences in the parent material. Although most of the soils formed in the clayey material derived from the underlying rock, many areas have 2 to 5 feet of very old alluvium (river sediment) above the clay that formed in limestone. Talbott and Colbert soils, for example, formed in the underlying limestone and are clayey or very clayey. Etowah, Capshaw, and Beason soils range from well drained to somewhat poorly drained, and formed in the old alluvium.

Shale valleys: The largest of the shale valleys is No Pone Valley. It is about ½ to 1 mile wide and extends throughout the county. The shale valleys are underlain by acid shale containing some seams or interbeds of limestone that decompose more rapidly than the rocks forming the ridges on either side. When these rocks weather away, a thin mantle of clayey soil material is left. Soil depth ranges from only a few inches to 3 or 4 feet.

In these valleys, nearly all of the soils are strongly acid and low in fertility and content of organic matter as a result of the warm, temperature climate and acid parent material Differences among the soils can be attributed almost entirely to drainage and topography and their effect on the downslope movement of soil. On the gently rolling tops of the low hills where the surface is relatively stable, the soils, such as those of the Sequoia series, are 2 to 4 feet thick over soft rock. On the adjacent steep slopes, soil material moves downslope almost as fast as it is formed. Thus, the Litz soils are more shallow to rock, contain many shale fragments, and are not old enough for the development of strong soil layers. This pattern of moderately deep soils on the rolling hilltops and more shallow soils on the side slopes is common throughout the shale valleys.

Classification of the Soils

Classification consists of an orderly grouping of soils according to a system designed to make it easier to remember soil characteristics and interrelationships. Classification is useful in organizing and applying the results of experience and research.

Soils are placed in narrow classes for discussion in detailed soil surveys and for application of knowledge within farms and fields. The many thousands of narrow classes are then grouped into progressively fewer and broader classes in successively higher categories, so that information can be applied to large geographic areas.

Two systems of classifying soils have been used in the United States in recent years. The older system was adopted in 1938 (*2*) and revised later (*5*). The system currently used by the National Cooperative Soil Survey (*7*) was developed in the early sixties and was adopted in 1965, and supplemented in March 1967 and in September 1968. The system is under continual study (*4*). Readers interested in the development of the system should refer to the latest literature available.

The current system of classification has six categories. Beginning with the most inclusive, these categories are the order, the suborder, the great group, the subgroup, the family, and the series. The criteria for classification are soil properties that are observable or measurable, but the properties are selected so that soils of similar genesis are grouped together. The placement of some soil series in the current system of classification, particularly in families, may change as more precise information becomes available.

Table 10 shows the classification of each soil series of Meigs County by family, subgroup, and order, according to the current system.

ORDER.—Ten soil orders are recognized in the current system, They are Alfisols, Aridisols, Entisols, Histosols, Inceptisols, Mollisols, Oxisols, Spodosols, Ultisols, and Vertisols. The properties used to differentiate the soil orders are those that tend to give broad climatic groupings of soils. Exceptions are the Entisols, Inceptisols, and Histosols, which occur in many different climates. Five of the 10 soil orders are represented in Meigs County: They are Entisols, Inceptisols, Mollisols, Alfisols, and Ultisols.

SUBORDER.—Each order is divided into suborders, primarily on the basis of soil characteristics that produce classes having genetic similarity. The suborder has a narrower climatic range than an order. The criteria for suborders reflect either the presence or absence of waterlogging or soil differences resulting from the climate or vegetation.

GREAT GROUP.—Each suborder is divided into great groups on the basis of uniformity in the kind and sequence of genetic horizons. The horizons considered in making these separations are those that have accumulations of clay, iron, or humus, and those that have a pan that interferes with the growth of roots or the movement

TABLE 10.—*Soil series classified by higher categories in the current system*

Series	Family	Subgroup	Order
Beason	Clayey, mixed, thermic	Aquic Hapludults	Ultisols.
Bodine	Loamy-skeletal, siliceous, thermic	Typic Paleudults	Ultisols.
Capshaw	Fine, mixed, thermic	Ultic Hapludalfs	Alfisols.
Chagrin [1]	Fine-loamy, mixed, mesic	Dystric Fluventic Eutrochrepts	Inceptisols.
Colbert	Very fine, montmorillonitic, thermic	Vertic Hapludalfs	Alfisols.
Conasauga	Fine, mixed, thermic	Typic Hapludalfs	Alfisols.
Decatur	Clayey, kaolinitic, thermic	Rhodic Paleudults	Ultisols.
Dowellton [2]	Very fine, mixed, thermic	Vertic Ochraqualfs	Alfisols.
Dunning [1]	Fine, mixed, noncalcareous, mesic	Fluventic Haplaquolls	Mollisols.
Egam	Fine, mixed, thermic	Cumulic Hapludolls	Mollisols.
Emory	Fine-silty, siliceous, thermic	Fluventic Umbic Dystrochrepts	Inceptisols.
Ennis	Fine-loamy, siliceous, thermic	Fluventic Dystrochrepts	Inceptisols.
Etowah	Fine-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Fullerton	Clayey, kaolinitic, thermic	Typic Paleudults	Ultisols.
Holston	Fine-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Humphreys [3]	Fine-loamy, siliceous, thermic	Humic Hapludults	Ultisols.
Lehew [1 3]	Loamy-skeletal, mixed, mesic	Typic Dystrochrepts	Inceptisols.
Lindside [1 3]	Fine-silty, mixed, mesic	Fluvaquentic Eutrochrepts	Inceptisols.
Litz [1]	Loamy-skeletal, mixed, mesic	Ruptic-Ultic Dystrochrepts	Inceptisols.
Lobelville	Fine-loamy, siliceous, thermic	Fluvaquentic Dystrochrepts	Inceptisols.
Minvale	Fine-loamy, siliceous, thermic	Typic Paleudults	Ultisols.
Montevallo	Loamy-skeletal, mixed, thermic, shallow	Typic Dystrochrepts	Inceptisols.
Newark [1 3]	Fine-silty, mixed, nonacid, mesic	Aeric Fluvaquents	Entisols.
Sequoia [1]	Clayey, mixed, mesic	Typic Hapludults	Ultisols.
Shouns [1]	Fine-loamy, mixed, mesic	Typic Hapludults	Ultisols.
Staser, coarse subsoil variant	Fine-loamy, mixed, thermic	Cumulic Hapludolls	Mollisols.
Talbott	Fine, mixed, thermic	Typic Hapludalfs	Alfisols.
Tarklin [1]	Fine-loamy, siliceous, mesic	Typic Fragiudults	Ultisols.
Teas [1]	Loamy-skeletal, mixed, mesic	Typic Dystrochrepts	Inceptisols.
Waynesboro	Clayey, kaolinitic, thermic	Typic Paleudults	Ultisols.
Whitwell	Fine-loamy, siliceous, thermic	Aquic Hapludults	Ultisols.
Wolftever	Clayey, mixed, thermic	Aquic Hapludults	Ultisols.

[1] These soils in Meigs County have slightly warmer temperatures than required for the series. They are considered taxadjuncts to the series in this respect.

[2] These soils in Meigs County have slightly less clay in the upper 20 inches of the argillic horizon than the 60 percent required for the Dowellton series. They are considered taxadjuncts to the Dowellton series in this respect.

[3] Further study of these soils in Meigs County may result in classifying them as siliceous, rather than mixed.

of water. The features considered are the self-mulching properties of clay, soil temperature, major differences in chemical composition (mainly in calcium, magnesium, sodium, and potassium), and the like.

SUBGROUP.—Each great group is divided into subgroups, one representing the central (typic) segment of the group and others, called intergrades, that have mostly properties of one great group but also one or more properties of another great group, suborder, or order. Subgroups may also be recognized in those instances where soil properties intergrade outside the range of any established great group, suborder, or order.

FAMILY.—Families are established within subgroups, primarily on the basis of properties important to the growth of plants or the behavior of soils when they are used for engineering. Among the properties considered are texture, mineralogy, reaction, soil temeprature, permeability, thickness of horizons, and consistence.

SERIES.—The series has the narrowest range of characteristics of the categories in the classification system. It is described fully in the section "How This Soil Survey Was Made." The profiles described under the mapping units in the section "Descriptions of the Soils" are considered representatives of the soil series recognized in this survey.

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Glossary

Acidity. See Reaction, soil.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates such as crumbs, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Soil material, such as sand, silt, or clay, that has been deposited on land by streams.

Available water capacity (also termed available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Colluvium. Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—

Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material, and tends to stretch somewhat and pull apart, rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard and brittle; little affected by moistening.

Creep, soil. The downward movement of masses of soil and soil material, primarily through the action of gravity. The movement is generally slow and irregular. It occurs most commonly when the lower part of the soil is nearly saturated with water, and it may be facilitated by alternate freezing and thawing.

Eluviation. The movement of material from one place to another within the soil, in either true solution or colloidal suspension. Soil horizons that have lost material through eluviation are said to be eluvial; those that have received material are illuvial.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flood plain. Nearly level land, consisting of stream sediment, that borders a stream and is subject to flooding unless protected artificially.

Fragipan. A loamy, brittle, subsurface horizon that is very low in organic-matter content and clay but is rich in silt or very fine sand. The layer is seemingly cemented. When dry, it is hard or very hard and has a high bulk density in comparison with the horizon or horizons above it. When moist, the fragipan tends to rupture suddenly if pressure is applied, rather than to deform slowly. The layer is generally mottled, is slowly or very slowly permeable to water, and has few or many bleached fracture planes that form polygons. Fragipans are a few inches to several feet thick; they generally occur below the B horizon, 15 to 40 inches below the surface.

Horizon, soil. A layer of soil, approximately parallel to the surface, that has distinct characteristics produced by soil-forming processes. These are the major horizons:

O horizon.—The layer of organic matter on the surface of a mineral soil. This layer consists of decaying plant residues.

A horizon.—The mineral horizon at the surface or just below an O horizon. This horizon is the one in which living organisms are most active and therefore is marked by the accumulation of humus. The horizon may have lost one or more of soluble salts, clay, and sesquioxides (iron and alumium oxides).

B horizon.—The mineral horizon below an A horizon. The B horizon is in part a layer of change from the overlying A horizon to the underlying C horizon. The B horizon also has distinctive characteristics caused (1) by accumulation of clay, sesquioxides, humus, or some combination of these; (2) by prismatic or blocky structure; (3) by redder or stronger colors than in the A horizon; or (4) by some combination of these. Combined A and B horizons are usually called the solum, or true soil. If a soil lacks a B horizon, the A horizon alone is the solum.

C horizon.—The weathered rock material immediately beneath the solum. In most soils this material is presumed to be like that from which the overlying horizons were formed. If the material is known to be different from that in the solum, a Roman numeral precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock usually underlies a C horizon but may be immediately beneath an A or B horizon.

Loess. Fine-grained material, dominantly of silt-sized particles that has been deposited by wind.

Microclimate. Local climatic conditions, brought about by the changes in the general climate resulting from local differences in elevation and exposure.

Morphology, soil. The physical makeup of the soil including the texture, structure, porosity, consistence, color, and other physical, mineralogical, and biological properties of the various horizons, and their thickness and arrangement in the soil profile.

Mottling, soil. Irregularly marked with spots of different colors that vary in number and size. Mottling in soils usually indicates poor aeration and lack of drainage. Descriptive terms are as follows: Abundance—*few, common,* and *many;* size—*fine, medium,* and *coarse;* and contrast—*faint, distinct,* and *prominent.* The size measurements are these: *fine,* less than 5 millimeters (about 0.2 inch) in diameter along the greatest dimension; *medium,* ranging from 5 millimeters to 15 millimeters (about 0.2 to 0.6 inch) in diameter along the greatest dimension; and *coarse,* more than 15 millimeters (about 0.6 inch) in diameter along the greatest dimension.

Munsell notation. A system for designating color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with a hue of 10YR, a value of 6, and a chroma of 4.

Parent material. Disintegrated and partly weathered rock from which soil has formed.

Permeability. The quality that enables the soil to transmit water or air. Terms used to describe permeability are as follows: *very slow, slow, moderately slow, moderate, moderately rapid, rapid, and very rapid.*

pH value. A numerical means for designating acidity and alkalinity in soils. A pH value of 7.0 indicates precise neutrality; a higher value, alkalinity; and a lower value, acidity.

Phase, soil. A subdivision of a soil, series, or other unit in the soil classification system made because of differences in the soil that affect its management but do not affect its classification in the natural landscape. A soil series, for example, may be divided into phases because of differences in slope, stoniness, thickness, or some other characteristic that affects its management but not its behavior in the natural landscape.

Profile, soil. A vertical section of the soil through all its horizons and extending into the parent material.

Reaction, soil. The degree of acidity of alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is precisely neutral in reaction because it is neither acid nor alkaline. An acid, or "sour" soil is one that gives an acid reaction; an alkaline soil is one that is alkaline in reaction. In words, the degrees of acidity or alkalinity are expressed thus:

	pH		*pH*
Extremely acid	Below 4.5	Neutral	6.6 to 7.3
Very strongly acid	4.5 to 5.0	Mildly alkaline	7.4 to 7.8
Strongly acid	5.1 to 5.5	Moderately alkaline	7.9 to 8.4
Medium acid	5.6 to 6.0	Strongly alkaline	8.5 to 9.0
Slightly acid	6.1 to 6.5	Very strongly alkaline	9.1 and higher

Relief. The elevations or inequalities of a land surface, considered collectively.

Residual material. Unconsolidated, partly weathered mineral material that accumulates over disintegrating solid rock. Residual material is not soil but is frequently the material in which a soil has formed.

Sand. Individual rock or mineral fragments in a soil that range in diameter from 0.05 to 2.0 millimeters. Most sand grains consist of quartz, but they may be of any mineral composition. The textural class name of any soil that contains 85 percent or more sand and not more than 10 percent clay.

Second bottom. The first terrace above the normal flood plain of a stream.

Silt. Individual mineral particles in a soil that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). Soil of the silt textural class is 80 percent or more silt and less than 12 percent clay.

Soil association. A group of soils geographically associated in a characteristic repeating pattern.

Solum. The upper part of a soil profile, above the parent material, in which the processes of soil formation are active. The solum in mature soil includes the A and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and other plant and animal life characteristic of the soil are largely confined to the solum.

Structure, soil. The arrangement of primary soil particles into compound particles or clusters that are separated from adjoining aggregates and have properties unlike those of an equal mass of unaggregated primary soil particles. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering together without any regular cleavage, as in many claypans and hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Substratum. Technically, the part of the soil below the solum.

Surface soil. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, about 5 to 8 inches in thickness. The plow layer.

Talus. Fragments of rock and other soil material accumulated by force of gravity at the base of cliffs or steep slopes.

Terrace (geological). An old alluvial plain, ordinarily flat or undulating, bordering a river, lake, or the sea. Stream terraces are frequently called second bottoms, as contrasted to flood plains, and are seldom subject to flooding. Marine terraces were deposited by the sea and are generally wide.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay, and clay.* The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Topsoil. A presumed fertile soil or soil material, or one that responds to fertilization, ordinarily rich in organic matter, used to topdress roadbanks, lawns, and gardens.

Upland (geology). Land consisting of material unworked by water in recent geologic time and lying, in general, at a higher elevation than the alluvial plain or stream terrace. Land above the lowlands along rivers.

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U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

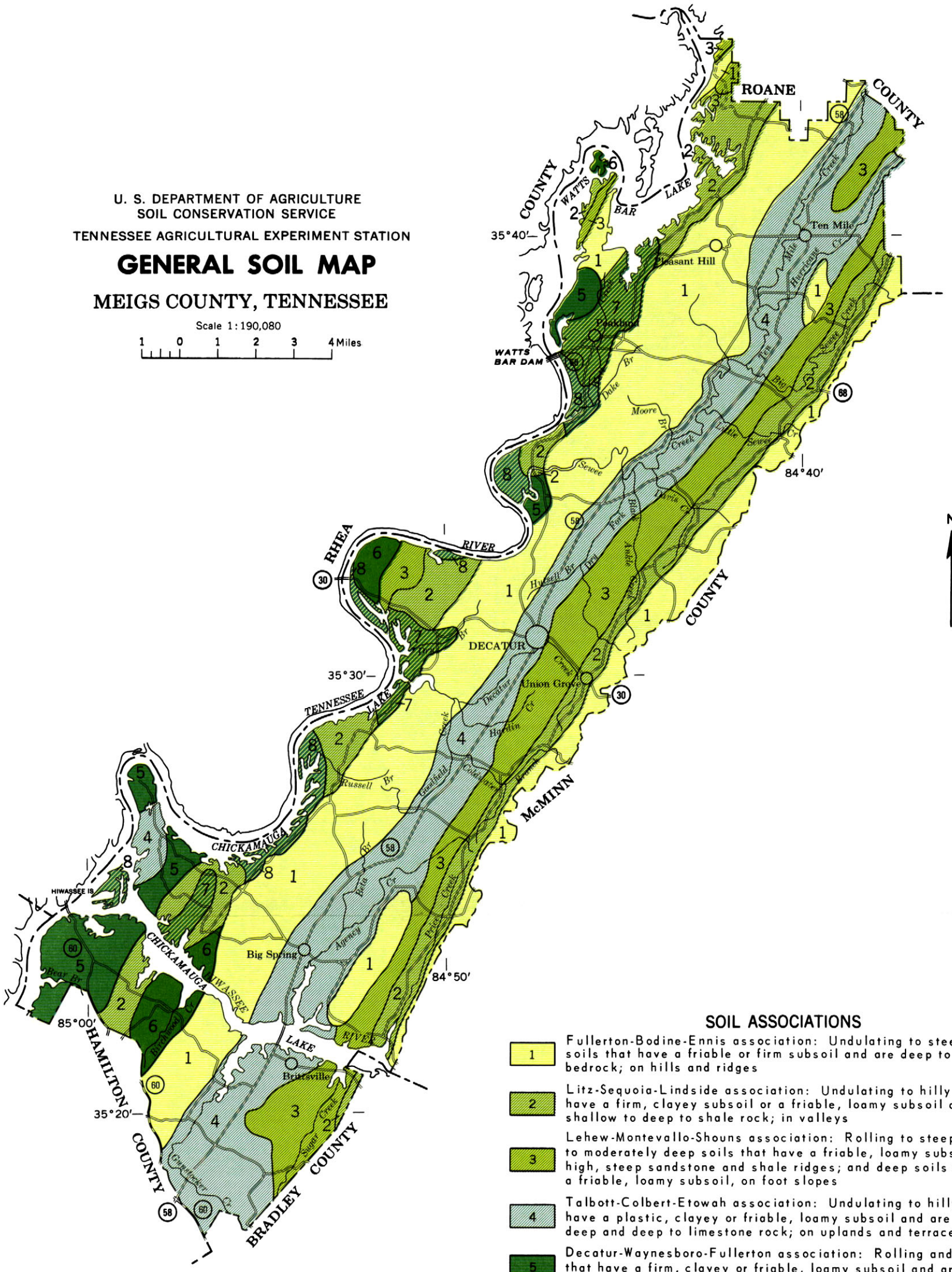
TENNESSEE AGRICULTURAL EXPERIMENT STATION

GENERAL SOIL MAP

MEIGS COUNTY, TENNESSEE

Scale 1:190,080

1 0 1 2 3 4 Miles



SOIL ASSOCIATIONS

1 Fullerton-Bodine-Ennis association: Undulating to steep, cherty soils that have a friable or firm subsoil and are deep to limestone bedrock; on hills and ridges

2 Litz-Sequoia-Lindside association: Undulating to hilly soils that have a firm, clayey subsoil or a friable, loamy subsoil and are shallow to deep to shale rock; in valleys

3 Lehew-Montevallo-Shouns association: Rolling to steep, shallow to moderately deep soils that have a friable, loamy subsoil, on high, steep sandstone and shale ridges; and deep soils that have a friable, loamy subsoil, on foot slopes

4 Talbott-Colbert-Etowah association: Undulating to hilly soils that have a plastic, clayey or friable, loamy subsoil and are moderately deep and deep to limestone rock; on uplands and terraces

5 Decatur-Waynesboro-Fullerton association: Rolling and hilly soils that have a firm, clayey or friable, loamy subsoil and are deep to limestone rock; on uplands and terraces

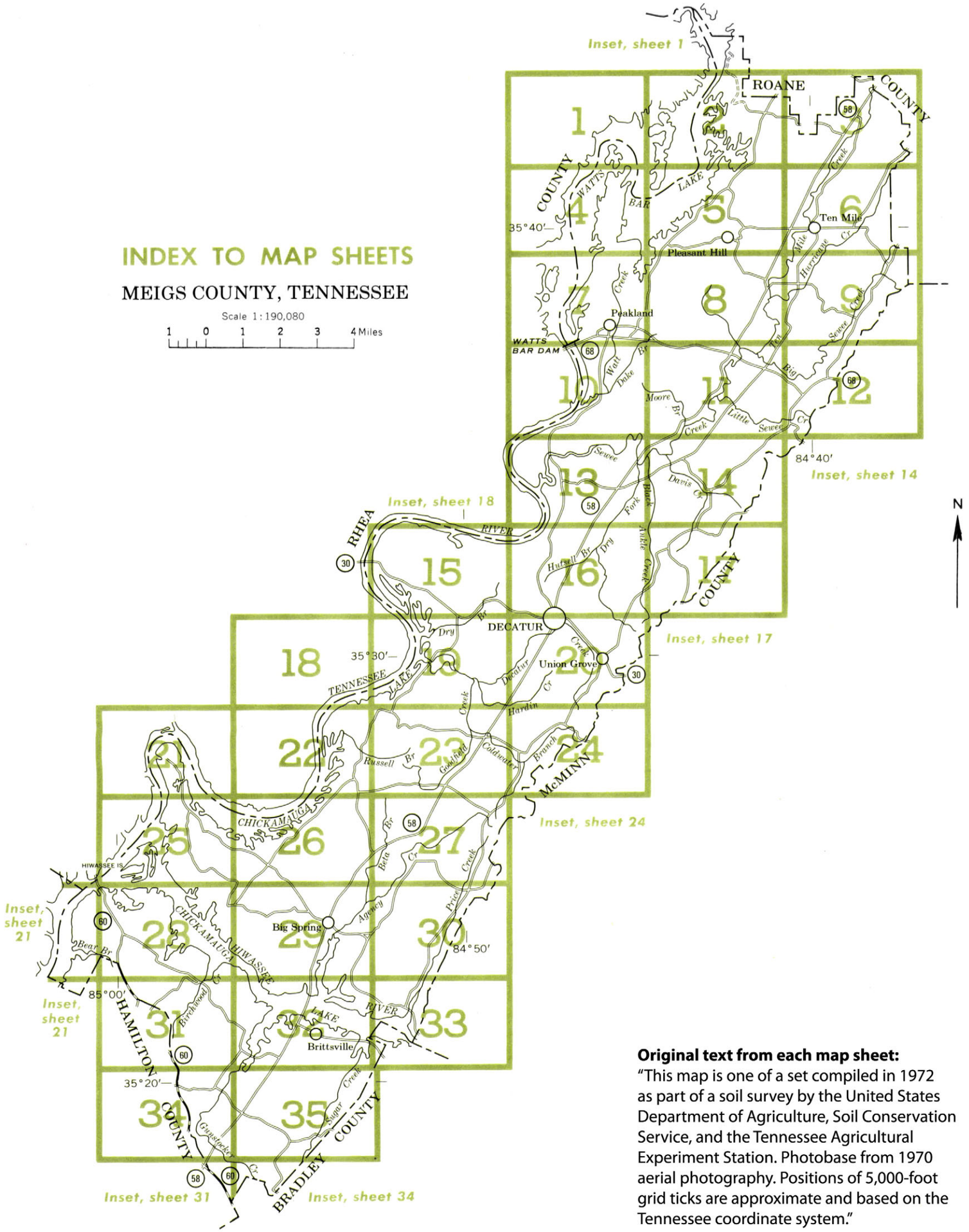
6 Decatur-Waynesboro-Talbott association: Undulating to hilly soils that have a firm and clayey, friable and loamy, or plastic and clayey subsoil and are deep and moderately deep to limestone rock; on uplands and terraces

7 Holston-Waynesboro-Sequoia association: Undulating to hilly soils that have a friable, loamy subsoil or a firm, clayey subsoil and are deep and moderately deep to shale rock; on uplands and terraces

8 Wolftever-Egam-Etowah association: Nearly level and undulating soils that have a firm or friable, loamy subsoil and are deep to limestone or shale rock; on low terraces along the Tennessee River

Compiled 1972

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.



Original text from each map sheet:
"This map is one of a set compiled in 1972 as part of a soil survey by the United States Department of Agriculture, Soil Conservation Service, and the Tennessee Agricultural Experiment Station. Photobase from 1970 aerial photography. Positions of 5,000-foot grid ticks are approximate and based on the Tennessee coordinate system."

SOIL LEGEND

The first capital letter is the initial one of the soil name. A second capital letter, A, B, C, D, E, or F, shows the slope. Most symbols without a slope letter are those of nearly level soils, but some are for land types that have a considerable range of slope. A final number, 2 or 3, in the symbol shows that the soil is eroded or severely eroded.

SYMBOL	NAME
Be	Beason silt loam
BoD	Bodine cherty silt loam, 5 to 20 percent slopes
BoE	Bodine cherty silt loam, 20 to 40 percent slopes
CaB	Capshaw silt loam, 2 to 5 percent slopes
CaC2	Capshaw silt loam, 5 to 12 percent slopes, eroded
Ch	Chagrin silt loam
ClC	Colbert silt loam, 3 to 12 percent slopes
CoC3	Colbert silty clay, 3 to 12 percent slopes, severely eroded
CsC	Conasauga silt loam, 3 to 12 percent slopes
DaB2	Decatur silt loam, 2 to 5 percent slopes, eroded
DaC2	Decatur silt loam, 5 to 12 percent slopes, eroded
DaD2	Decatur silt loam, 12 to 25 percent slopes, eroded
DbC2	Decatur gravelly silt loam, 5 to 12 percent slopes, eroded
DbD2	Decatur gravelly silt loam, 12 to 20 percent slopes, eroded
DcC3	Decatur silty clay loam, 5 to 12 percent slopes, severely eroded
DcD3	Decatur silty clay loam, 12 to 20 percent slopes, severely eroded
DdD2	Decatur gravelly silty clay loam, 12 to 20 percent slopes, eroded
Do	Dowellton silt loam
Du	Dunning silty clay loam
Eg	Egam silty clay loam
Em	Emory silt loam
En	Ennis silt loam
Eo	Ennis cherty silt loam
EsB	Etowah silt loam, 2 to 5 percent slopes
EsC	Etowah silt loam, 5 to 12 percent slopes
EtB	Etowah gravelly silt loam, 2 to 5 percent slopes
EtC	Etowah gravelly silt loam, 5 to 12 percent slopes
FaC	Fullerton silt loam, 5 to 12 percent slopes
FaD	Fullerton silt loam, 12 to 20 percent slopes
FcC	Fullerton cherty silt loam, 5 to 12 percent slopes
FcD	Fullerton cherty silt loam, 12 to 20 percent slopes
FcE	Fullerton cherty silt loam, 20 to 30 percent slopes
FcF	Fullerton cherty silt loam, 30 to 45 percent slopes
FdD3	Fullerton cherty silty clay loam, 12 to 20 percent slopes, severely eroded
FdE3	Fullerton cherty silty clay loam, 20 to 30 percent slopes, severely eroded
Gu	Gullied land, clayey material
Gv	Gullied land, Litz soil material
HoB	Holston loam, 2 to 5 percent slopes
HoC	Holston loam, 5 to 12 percent slopes
HsC	Holston gravelly loam, 5 to 12 percent slopes
HuB	Humphreys silt loam, 2 to 5 percent slopes
LeD	Lehew channery loam, 5 to 20 percent slopes
LeF	Lehew channery loam, 20 to 60 percent slopes
Ln	Lindside silt loam
LsD	Litz silt loam, 5 to 20 percent slopes
LsE	Litz silt loam, 20 to 30 percent slopes
LtD3	Litz shaly silty clay loam, 5 to 20 percent slopes, severely eroded
Lv	Lobelville cherty silt loam
MnC	Minvale silt loam, 5 to 12 percent slopes
MrC	Minvale cherty silt loam, 5 to 12 percent slopes
MrD2	Minvale cherty silt loam, 12 to 20 percent slopes, eroded
MtD	Montevallo shaly silt loam, 5 to 20 percent slopes
MtE	Montevallo shaly silt loam, 20 to 30 percent slopes
Ne	Newark silt loam
Ro	Rock land
SeB2	Sequoia silt loam, 2 to 5 percent slopes, eroded
SeC2	Sequoia silt loam, 5 to 12 percent slopes, eroded
SkC3	Sequoia silty clay, 5 to 12 percent slopes, severely eroded
SnC	Shouns silt loam, 5 to 12 percent slopes
SnD2	Shouns silt loam, 12 to 20 percent slopes, eroded
SoD3	Shouns silty clay loam, 10 to 20 percent slopes, severely eroded
St	Staser fine sandy loam, coarse subsoil variant
TaB	Talbott silt loam, 2 to 5 percent slopes
TaC2	Talbott silt loam, 5 to 12 percent slopes, eroded
TaD2	Talbott silt loam, 12 to 20 percent slopes, eroded
TcD3	Talbott silty clay, 5 to 20 percent slopes, severely eroded
TkD	Talbott-Rock outcrop complex, 5 to 20 percent slopes
TiB	Tarklin silt loam, 2 to 8 percent slopes
TnB	Tarklin cherty silt loam, 2 to 5 percent slopes
TnC	Tarklin cherty silt loam, 5 to 12 percent slopes
TsD	Teas silt loam, 5 to 20 percent slopes
TsE	Teas silt loam, 20 to 40 percent slopes
WaC	Waynesboro loam, 5 to 12 percent slopes
WaD	Waynesboro loam, 12 to 20 percent slopes
WgC	Waynesboro gravelly loam, 5 to 12 percent slopes
WgD	Waynesboro gravelly loam, 12 to 20 percent slopes
WgE	Waynesboro gravelly loam, 20 to 30 percent slopes
WhD2	Waynesboro clay loam, 5 to 20 percent slopes, eroded
WkD2	Waynesboro gravelly clay loam, 5 to 20 percent slopes, eroded
WtB	Whitwell loam, 0 to 5 percent slopes
WvB	Wolftever silt loam, 1 to 5 percent slopes
WvC2	Wolftever silt loam, 5 to 12 percent slopes, eroded

CONVENTIONAL SIGNS

WORKS AND STRUCTURES

Highways and roads
- Divided
- Good motor
- Poor motor
- Trail

Highway markers
- National Interstate
- U. S.
- State or county

Railroads
- Single track
- Multiple track
- Abandoned

Bridges and crossings
- Road
- Trail
- Railroad
- Ferry (FY)
- Ford (FORD)
- Grade
- R. R. over
- R. R. under

Buildings
- School
- Church

Mine and quarry

Gravel pit

Power line

Pipeline

Cemetery

Dams

Levee

Tanks

Well, oil or gas

Forest fire or lookout station

Windmill

Located object

BOUNDARIES

- National or state
- County
- Minor civil division
- Reservation
- Land grant
- Small park, cemetery, airport
- Land survey division corners

DRAINAGE

Streams, double-line
- Perennial
- Intermittent

Streams, single-line
- Perennial
- Intermittent
  - Crossable with tillage implements
  - Not crossable with tillage implements
  - Unclassified

Canals and ditches

Lakes and ponds
- Perennial (water, w)
- Intermittent (int)

Spring

Marsh or swamp

Wet spot

Drainage end or alluvial fan

RELIEF

Escarpments
- Bedrock
- Other

Short steep slope

Prominent peak

Depressions

	Large	Small
Unclassified		
Not crossable with tillage implements		
Contains water most of the time		

SOIL SURVEY DATA

- Soil boundary and symbol (Dx)
- Gravel
- Stoniness
  - Stony
  - Very stony
- Rock outcrops
- Chert fragments
- Clay spot
- Sand spot
- Gumbo or scabby spot
- Made land
- Severely eroded spot
- Blowout, wind erosion
- Gully
- Indian mound
- Mine dump (M.D.)

GUIDE TO MAPPING UNITS

For a full description of a mapping unit, read both the description of the mapping unit and the description of the soil series to which the mapping unit belongs. In referring to a capability unit, read the introduction to the section the unit is in for general information about its management. Other information is given in tables as follows:

Acreage and extent, table 3, p. 12.
Estimated yields, table 4, p. 42.
Woodland suitability groups of soils, table 5, p. 45.
Use of soils for wildlife, table 6, p. 48.
Engineering uses of soils, tables 7 and 8, pp. 52 through 61.
Use of soils for recreation, table 9, p. 62.

Map symbol	Mapping unit	Described on page	Capability unit: Symbol	Capability unit: Page	Woodland group: Number
Be	Beason silt loam	11	IIw-1	38	3w8
BoD	Bodine cherty silt loam, 5 to 20 percent slopes	13	VIs-2	41	4f3
BoE	Bodine cherty silt loam, 20 to 40 percent slopes	14			
	North and east exposures	--	VIIs-1	41	3f8
	South and west exposures	--	VIIs-1	41	4f3
CaB	Capshaw silt loam, 2 to 5 percent slopes	14	IIe-2	38	3o7
CaC2	Capshaw silt loam, 5 to 12 percent slopes, eroded	14	IIIe-3	39	3o7
Ch	Chagrin silt loam	15	I-1	37	2o7
ClC	Colbert silt loam, 3 to 12 percent slopes	15	IVe-3	40	4c2
CoC3	Colbert silty clay, 3 to 12 percent slopes, severely eroded	16	VIe-2	41	5c3e
CsC	Conasauga silt loam, 3 to 12 percent slopes	16	IVe-3	40	3c2
DaB2	Decatur silt loam, 2 to 5 percent slopes, eroded	17	IIe-1	38	3o7
DaC2	Decatur silt loam, 5 to 12 percent slopes, eroded	17	IIIe-1	38	3o7
DaD2	Decatur silt loam, 12 to 25 percent slopes, eroded	17	IVe-1	40	3o7
DbC2	Decatur gravelly silt loam, 5 to 12 percent slopes, eroded	17	IIIe-2	39	3o7
DbD2	Decatur gravelly silt loam, 12 to 20 percent slopes, eroded	17	IVe-2	40	3o7
DcC3	Decatur silty clay loam, 5 to 12 percent slopes, severely eroded	17	IVe-1	40	4c3e
DcD3	Decatur silty clay loam, 12 to 20 percent slopes, severely eroded	17	IVe-1	40	4c3e
DdD2	Decatur gravelly silty clay loam, 12 to 20 percent slopes, eroded	17	IVe-2	40	4c3e
Do	Dowellton silt loam	18	IIIw-1	39	3w9
Du	Dunning silty clay loam	18	IIIw-1	39	2w9
Eg	Egam silty clay loam	19	I-2	37	2o7
Em	Emory silt loam	19	I-1	37	2o7
En	Ennis silt loam	19	I-1	37	2o7
Eo	Ennis cherty silt loam	20	IIs-1	38	2o7
EsB	Etowah silt loam, 2 to 5 percent slopes	21	IIe-1	38	2o7
EsC	Etowah silt loam, 5 to 12 percent slopes	21	IIIe-1	38	2o7
EtB	Etowah gravelly silt loam, 2 to 5 percent slopes	22	IIe-1	38	2o7
EtC	Etowah gravelly silt loam, 5 to 12 percent slopes	22	IIIe-2	39	2o7
FaC	Fullerton silt loam, 5 to 12 percent slopes	22	IIIe-1	38	3o7
FaD	Fullerton silt loam, 12 to 20 percent slopes	22	IVe-1	40	3o7
FcC	Fullerton cherty silt loam, 5 to 12 percent slopes	23	IIIe-2	39	3o7
FcD	Fullerton cherty silt loam, 12 to 20 percent slopes	23	IVe-2	40	3o7
FcE	Fullerton cherty silt loam, 20 to 30 percent slopes	23	VIe-1	40	3r8
FcF	Fullerton cherty silt loam, 30 to 45 percent slopes	23	VIIe-1	41	3r8
FdD3	Fullerton cherty silty clay loam, 12 to 20 percent slopes, severely eroded	23	IVe-2	40	4c3e
FdE3	Fullerton cherty silty clay loam, 20 to 30 percent slopes, severely eroded	23	VIe-1	40	4c3e
Gu	Gullied land, clayey material	23	VIIe-1	41	----
Gv	Gullied land, Litz soil material	24	VIIs-1	41	----
HoB	Holston loam, 2 to 5 percent slopes	24	IIe-1	38	3o7
HoC	Holston loam, 5 to 12 percent slopes	24	IIIe-1	38	3o7
HsC	Holston gravelly loam, 5 to 12 percent slopes	24	IIIe-2	39	3o7
HuB	Humphreys silt loam, 2 to 5 percent slopes	25	IIe-1	38	2o7
LeD	Lehew channery loam, 5 to 20 percent slopes	25	VIs-2	41	4f3
LeF	Lehew channery loam, 20 to 60 percent slopes	26	VIIs-1	41	4f3
Ln	Lindside silt loam	26	I-2	37	2w8
LsD	Litz silt loam, 5 to 20 percent slopes	26	VIs-2	41	3f8
LsE	Litz silt loam, 20 to 30 percent slopes	27	VIs-2	41	3f8
LtD3	Litz shaly silty clay loam, 5 to 20 percent slopes, severely eroded	27	VIs-2	41	4c3e
Lv	Lobelville cherty silt loam	27	IIs-1	38	2w8
MnC	Minvale silt loam, 5 to 12 percent slopes	28	IIIe-1	38	3o7
MrC	Minvale cherty silt loam, 5 to 12 percent slopes	28	IIIe-2	39	3o7
MrD2	Minvale cherty silt loam, 12 to 20 percent slopes, eroded	28	IVe-2	40	3o7
MtD	Montevallo shaly silt loam, 5 to 20 percent slopes	28	VIs-2	41	4d3
MtE	Montevallo shaly silt loam, 20 to 30 percent slopes	28	VIIs-1	41	4d3
Ne	Newark silt loam	29	IIw-1	38	2w8
Ro	Rock land	29	VIIs-1	41	----
SeB2	Sequoia silt loam, 2 to 5 percent slopes, eroded	29	IIIe-4	39	3o7
SeC2	Sequoia silt loam, 5 to 12 percent slopes, eroded	29	IVe-3	40	3o7
SkC3	Sequoia silty clay, 5 to 12 percent slopes, severely eroded	30	VIe-2	41	4c3e
SnC	Shouns silt loam, 5 to 12 percent slopes	30	IIIe-1	38	3o7
SnD2	Shouns silt loam, 12 to 20 percent slopes, eroded	30	IVe-1	40	3o7
SoD3	Shouns silty clay loam, 10 to 20 percent slopes, severely eroded	30	IVe-1	40	4c3e
St	Staser fine sandy loam, coarse subsoil variant	31	I-1	37	2o7
TaB	Talbott silt loam, 2 to 5 percent slopes	32	IIIe-4	39	3c2
TaC2	Talbott silt loam, 5 to 12 percent slopes, eroded	32	IVe-3	40	3c2
TaD2	Talbott silt loam, 12 to 20 percent slopes, eroded	32	VIe-2	41	3c2
TcD3	Talbott silty clay, 5 to 20 percent slopes, severely eroded	32	VIe-2	41	4c3e
TkD	Talbott-Rock outcrop complex, 5 to 20 percent slopes	32	VIs-2	41	4x3
TlB	Tarklin silt loam, 2 to 8 percent slopes	33	IIe-2	38	3o7
TnB	Tarklin cherty silt loam, 2 to 5 percent slopes	33	IIe-2	38	3o7
TnC	Tarklin cherty silt loam, 5 to 12 percent slopes	33	IIIe-3	39	3o7
TsD	Teas silt loam, 5 to 20 percent slopes	33	VIs-2	41	4f3
TsE	Teas silt loam, 20 to 40 percent slopes	33	VIIs-1	41	4f3
WaC	Waynesboro loam, 5 to 12 percent slopes	34	IIIe-1	38	3o7
WaD	Waynesboro loam, 12 to 20 percent slopes	34	IVe-1	40	3o7
WgC	Waynesboro gravelly loam, 5 to 12 percent slopes	34	IIIe-2	39	3o7
WgD	Waynesboro gravelly loam, 12 to 20 percent slopes	34	IVe-2	40	3o7
WgE	Waynesboro gravelly loam, 20 to 30 percent slopes	34	VIe-1	40	3r8
WhD2	Waynesboro clay loam, 5 to 20 percent slopes, eroded	34	IVe-1	40	4c3e
WkD2	Waynesboro gravelly clay loam, 5 to 20 percent slopes, eroded	35	IVe-2	40	4c3e
WtB	Whitwell loam, 0 to 5 percent slopes	35	I-2	37	2w8
WvB	Wolftever silt loam, 1 to 5 percent slopes	35	IIe-2	38	3w8
WvC2	Wolftever silt loam, 5 to 12 percent slopes, eroded	35	IIIe-3	39	3w8

478-383 O - 74 (Face Maps)

355 000 FEET

485 000 FEET

382 000 FEET

495 000 FEET

ROANE COUNTY

TENNESSEE

RHEA COUNTY

WATTS BAR LAKE

TENNESSEE RIVER

BOUNDARY

INDEFINITE

SnC
EsC
Ln
LeF
MrD2
DcD3
SkC3
DcC3
TkD
MtE
Ro
FcE
FcC
FcF
MtD
FcD
SnD2
SoD3
FdE3

490 000 FEET

(Joins sheet 2)

388 000 FEET

3000 AND 5000-FOOT GRID TICKS

480 000 FEET

RHEA COUNTY

WATTS BAR LAKE

WgD
Ro
Fooshee
TkD
Bend
W
DaC2
LsD
LeF

(Joins sheet 4)

370 000 FEET

N

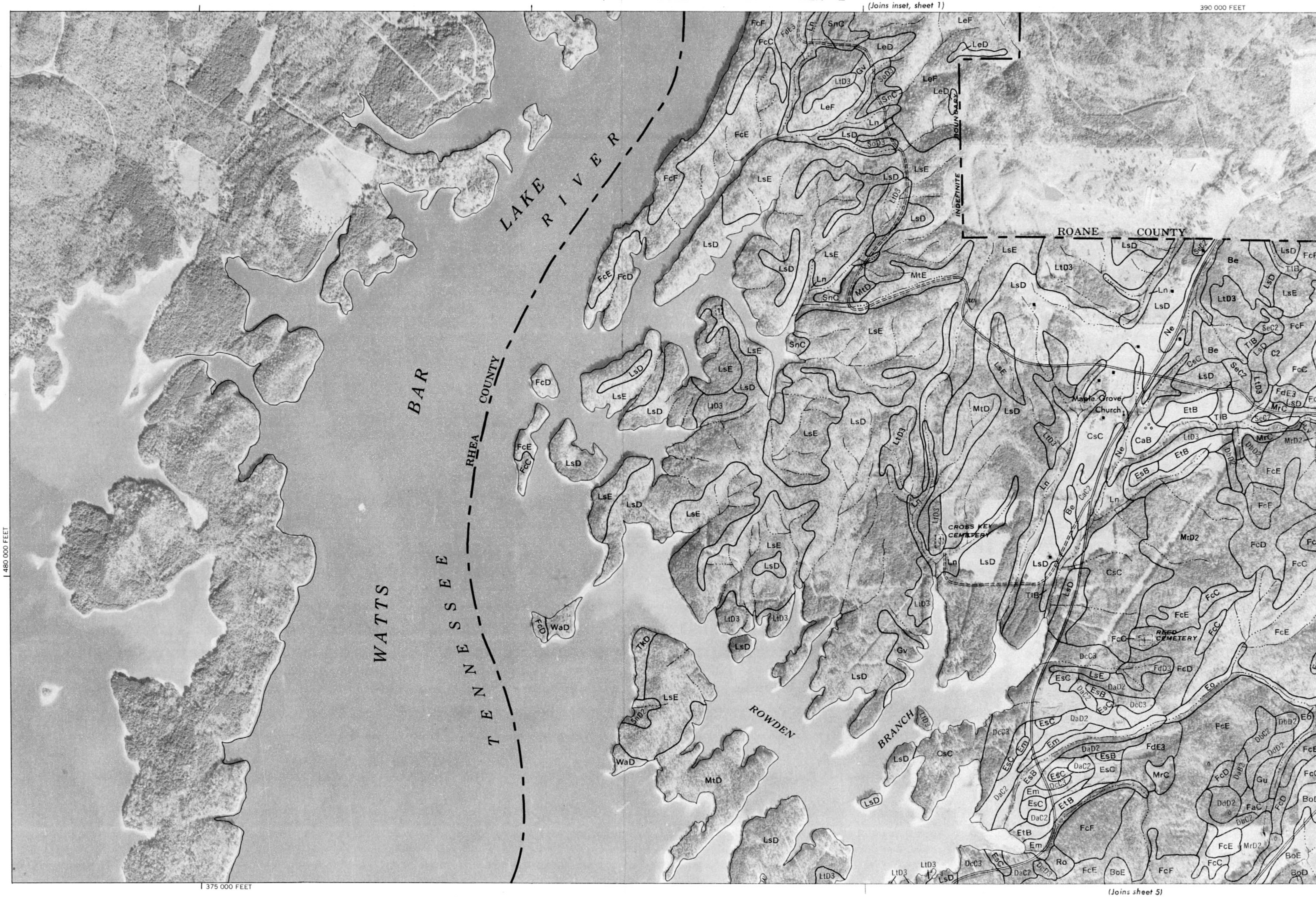
1 Mile

5000 Feet

Scale 1:15840

0 1/4 1/2 3/4 1

0 1000 2000 3000 4000 5000

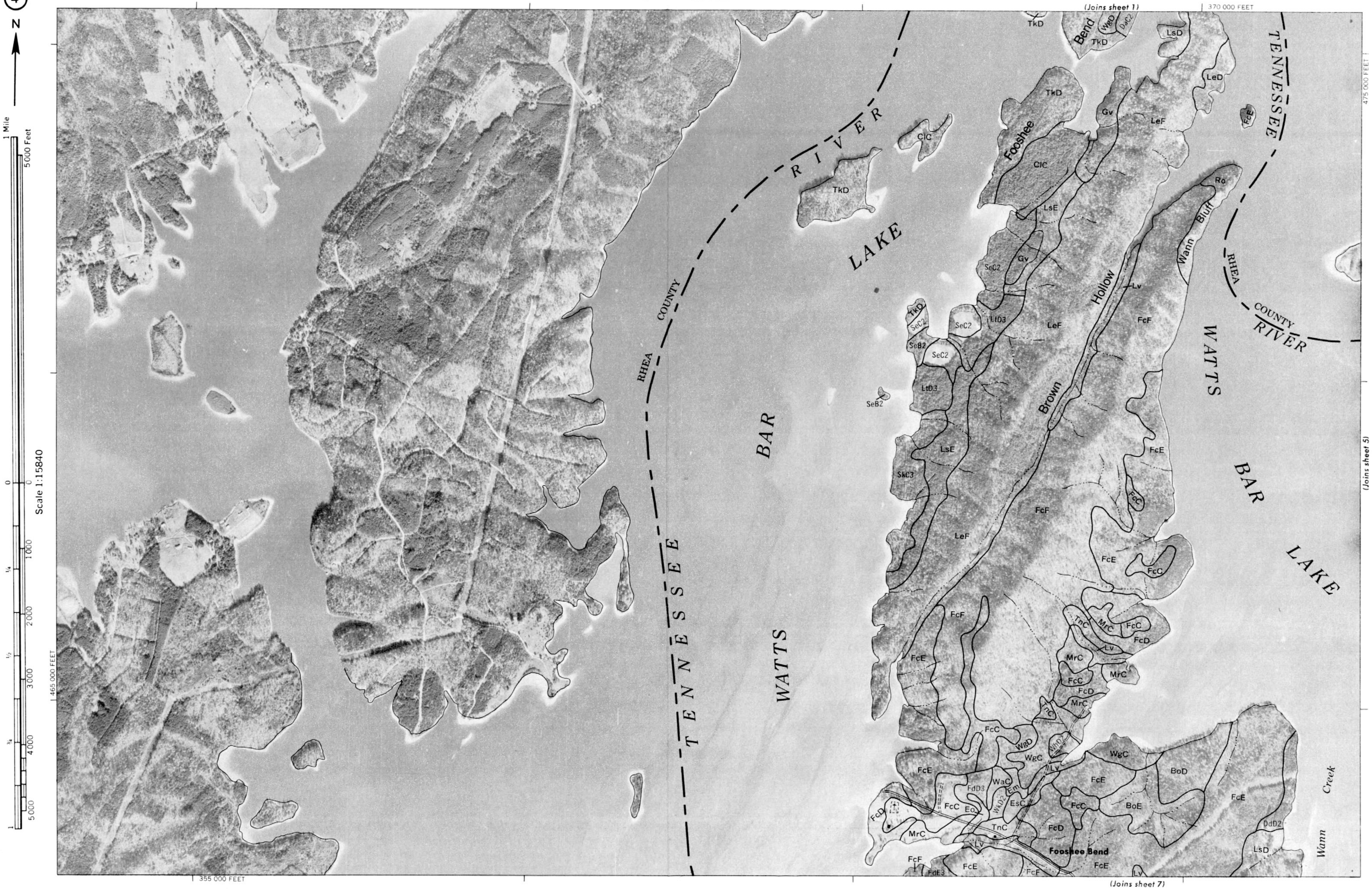


N

1 Mile
5000 Feet
Scale 1:15840
0 ¼ ½ ¾ 1
0 1000 2000 3000 4000 5000

MEIGS COUNTY, TENNESSEE NO. 2

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 3


N
Scale 1:15840
1 Mile
5000 Feet
(Joins sheet 1)
370 000 FEET
475 000 FEET
(Joins sheet 5)
(Joins sheet 7)
355 000 FEET
465 000 FEET
TENNESSEE RIVER
RHEA COUNTY
WATTS BAR LAKE
Fooshee
Bend
Brown Hollow
Wann Bluff
Fooshee Bend
Wann Creek
TkD
WgD
DdC2
LsD
LeD
FcE
Gv
LeF
ClC
LsE
SeC2
Ro
Lv
FcF
LtD3
SeB2
LsE
SkC3
FcC
FcD
TnC
MrC
WgC
BoD
BoE
FdD3
WaC
Em
EsC
Eo
DdD2
FdE3

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 5

MEIGS COUNTY, TENNESSEE NO. 5

375 000 FEET

475 000 FEET

(Joins sheet 2)

(Joins sheet 4)

(Joins sheet 6)

(Joins sheet 8)

390 000 FEET

465 000 FEET

TENNESSEE

RHEA COUNTY

RIVER

LAKE

BAR

WATTS

WANN CREEK

HORNSBY CEM

EUCHEE BOAT DOCK

BAKER CEMETERY

WASSON CEMETERY

PLEASANT HILL CEMETERY

BOARKE CEMETERY

Pleasant Hill

McElrath

Pikeville

5

N

1 Mile

5000 Feet

Scale 1:15840

N

1 Mile

5000 Feet

Scale 1:15840

(Joins sheet 3)

(Joins sheet 5)

(Joins sheet 9)

410 000 FEET

475 000 FEET

465 000 FEET

395 000 FEET

Ten Mile Knob

RIDGE

Ten Mile Creek

Ten Mile

Ten Mile School

KNIGHT CEMETERY

JOHNSON CEMETERY

EWING CEMETERY

BALDWIN CEMETERY

QUARRY

Indian Mounds

Indian Mound

Hurricane Creek

HURRICANE

VALLEY RIDGE

ROANE COUNTY BOUNDARY

INDEFINITE

Dirty Fork

TIB


N
355 000 FEET
460 000 FEET
(Joins sheet 4)
(Joins sheet 8)
(Joins sheet 10)
370 000 FEET
450 000 FEET
WATTS BAR LAKE
TENNESSEE RIVER
RHEA COUNTY
WANN CREEK
MEIGS COUNTY PARK
Peakland
PEAK CEM
OAK GROVE CEMETERY
Pinhook Church
ROCKY SPRINGS CEMETERY
Rocky Springs Church
Akeman Crossroad
Watt Creek
MINE DUMP
WATTS BAR DAM
M.D.
68
1 Mile
5000 Feet
Scale 1:15840

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 8

N

Scale 1:15840

1 Mile 5000 Feet

(Joins sheet 5)

(Joins sheet 7)

(Joins sheet 11)

(Joins sheet 9)

390 000 FEET

460 000 FEET

450 000 FEET

375 000 FEET

WANN CREEK

McCall Branch

Nebo Branch

Mile Creek

Hurricane Creek

Possom Hollow

MT WESLEY CEMETERY

MEIGS COUNTY, TENNESSEE NO. 8

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 9

(Joins sheet 6)

395 000 FEET

460 000 FEET

(Joins sheet 8)

(Joins sheet 12)

450 000 FEET

410 000 FEET

MEIGS COUNTY, TENNESSEE NO. 9

9

N

1 Mile

5000 Feet

Scale 1:15840

ROANE COUNTY

McMINN COUNTY

BOUNDARY INDEFINITE

Ten Mile Creek

Hurricane Creek

HURRICANE RIDGE

Big Seven Creek

Surprise

EDGEMON CEMETERY

MT ZION CEMETERY


N
1 Mile
5000 Feet
Scale 1:15840
(Joins sheet 7)
370 000 FEET
445 000 FEET
440 000 FEET
355 000 FEET
(Joins sheet 11)
(Joins sheet 13)
WATTS BAR DAM
MINE DUMP
CHICKAMAUGA LAKE
TENNESSEE RIVER
RHEA COUNTY
Walt Creek
Duke Branch
BLALOCK RIDGE
SEWEE CREEK
Forest Grove
MEIGS COUNTY, TENNESSEE NO. 10

N

375 000 FEET

445 000 FEET

440 000 FEET

390 000 FEET

(Joins sheet 8)

(Joins sheet 10)

(Joins sheet 12)

(Joins sheet 14)

MOORE CEMETERY

Peak Chapel

SEWEE

CREEK

Moore Branch

Tom Mile Ct

Center Point

HUTSELL CEM

Indian Mound

Indian Mounds

Little Sewee Creek

1 Mile

5000 Feet

Scale 1:15840

MEIGS COUNTY, TENNESSEE NO. 11

12

N

(Joins sheet 9)

410 000 FEET

450 000 FEET

1 Mile

5000 Feet

Scale 1:15840

(Joins sheet 11)

440 000 FEET

(Joins inset, sheet 14)

395 000 FEET

BOUNDARY

McMINN COUNTY

INDEFINITE

Bogge Crossroad

Big Sewee Creek

Little Sewee Creek

South Fork

MEIGS COUNTY, TENNESSEE NO. 12

355 000 FEET

435 000 FEET

425 000 FEET

370 000 FEET

(Joins sheet 10)

(Joins sheet 14)

(Joins sheet 16)

13

N

1 Mile

5000 Feet

Scale 1:15840

TENNESSEE
CHICKAMAUGA
RIVER
LAKE
RHEA
COUNTY

CREEK

SEWEE

Fairview
School

Fairview

Sewee
Landing

Dry
Fork

WARD
RIDGE

N

1 Mile

5000 Feet

Scale 1:15840

(Joins sheet 11)

(Joins sheet 13)

(Joins sheet 17)

(Joins sheet 12)

(Joins upper right)

390 000 FEET

435 000 FEET

425 000 FEET

375 000 FEET

394 000 FEET

437 000 FEET

392 000 FEET

2000-FOOT GRID TICKS

SEWEE CREEK

Dark Creek

GREGORY CEMETERY

Pisgah Church

RIDGE

Creek

NO PONE

Ankle Creek

Black Creek

Davis Creek

Rails Hollow

BOUNDARY

McMINN COUNTY

INDEFINITE

MEIGS COUNTY, TENNESSEE NO. 14

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 15

MEIGS COUNTY, TENNESSEE NO. 15

N

1 Mile

5000 Feet

0 0

Scale 1:15840

1/4 1000

1/2 2000

3/4 3000

1 4000

5000

370 000 FEET

(Joins sheet 13)

420 000 FEET

415 000 FEET

355 000 FEET

(Joins sheet 15)

(Joins sheet 17)

(Joins sheet 20)

RHEA COUNTY

TENNESSEE R

CHICKAMAUGA LAKE

Bredenton

Stewart Branch

Hutsell Branch

The Narrows

Dry Fork

STEWART CEMETERY

DECATUR CEMETERY

Meigs County High School

DECATUR (county seat)

RIDGE

WARD

NO PONE

DECATUR

VALLEY

MEIGS COUNTY, TENNESSEE NO. 16

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 17

N

(Joins sheet 14)

375 000 FEET

420 000 FEET

(Joins sheet 16)

(Joins inset)

390 000 FEET

Walnut Grove

WALNUT GROVE CEMETERY

Walnut Grove Church

OLD WALNUT GROVE CEMETERY

McMINN COUNTY

McMINN

INDEFINITE BDY

(Joins lower left)

373 000 FEET

411 000 FEET

(Joins sheet 20)

409 000 FEET

376 000 FEET

2000 AND 3000-FOOT GRID TICKS

1 Mile

5000 Feet

415 000 FEET

Scale 1:15840

MEIGS COUNTY, TENNESSEE NO. 17

18

N

1 Mile

5000 Feet

Scale 1:15840

330 000 FEET

410 000 FEET

350 000 FEET

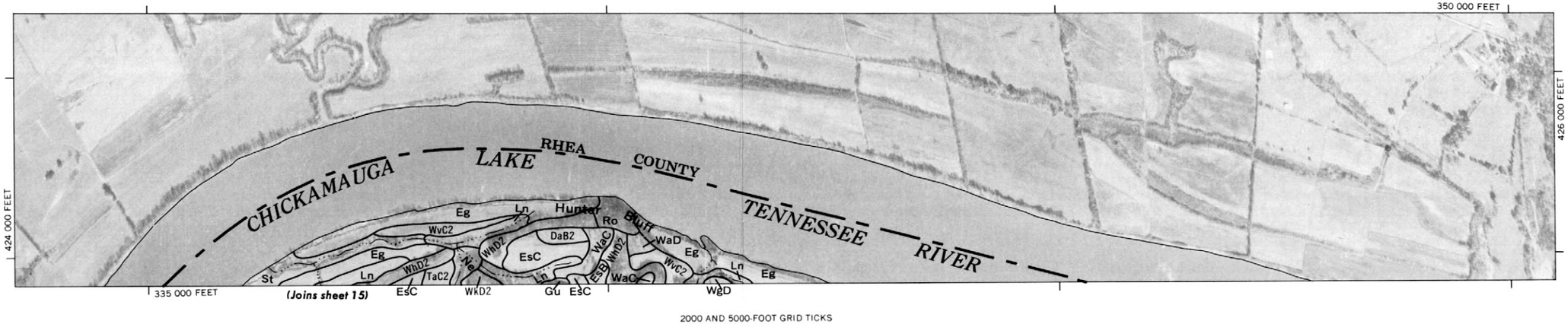
426 000 FEET

424 000 FEET

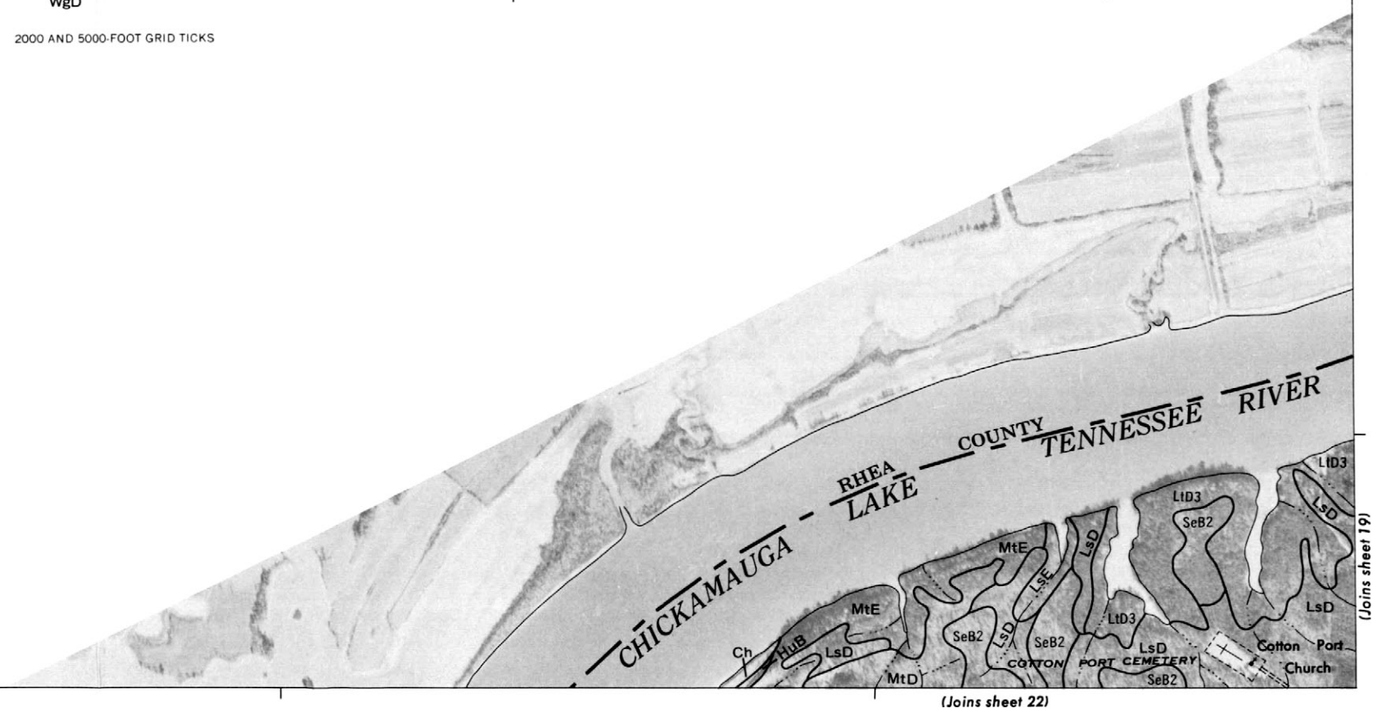
335 000 FEET

400 000 FEET

315 000 FEET



2000 AND 5000-FOOT GRID TICKS



MEIGS COUNTY, TENNESSEE NO. 18

(Joins sheet 15)

N

410 000 FEET

TENNESSEE

RIVER

COUNTY

RHEA

LAKE

CHICKAMAUGA

CREEK

GOODFIELD

Dry Branch

Goodfield Creek

Decatur

Harchin Creek

Indian Mound Creek

1 Mile

5000 Feet

Scale 1:15840

1400 000 FEET

350 000 FEET

(Joins sheet 18)

(Joins sheet 20)

(Joins sheet 23)

MEIGS COUNTY, TENNESSEE NO. 19

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 20

(20)

N

(Joins sheet 16)

370 000 FEET

(Joins inset, sheet 17)

DECATUR
(county seat)

Decatur

Creek

VALLEY

RIDGE

GOODFIELD

DECATUR

RIDGE

VALLEY

Harden

Creek

PONE

NO

PONE

McMINN

COUNTY

OLD GOODFIELD CEMETERY

Union Grove Church

Union Grove

Ro

Lv

1 Mile

5000 Feet

Scale 1:15840

(Joins sheet 19)

1000 FEET

400 000 FEET

355 000 FEET

(Joins sheet 24)

MEIGS COUNTY, TENNESSEE NO. 20

N

295 000 FEET

290 000 FEET

395 000 FEET

370 000 FEET

RHEA CO

TENNESSEE RIVER

HAMILTON COUNTY

LAKE CHICKAMAUGA

OLD BROWDER CEMETERY

BEAR BRANCH

HAMILTON CO

(Joins sheet 28)

365 000 FEET

TnB (Joins upper right)

295 000 FEET

INSET B

290 000 FEET

FcC Ln (Joins inset B)

360 000 FEET

HAMILTON COUNTY

357 000 FEET

295 000 FEET

3000 AND 5000-FOOT GRID TICKS

INSET A

RHEA COUNTY

TENNESSEE RIVER

CHICKAMAUGA LAKE

(Joins sheet 25)

385 000 FEET

310 000 FEET

1 Mile

5000 Feet

Scale 1:15840

MEIGS COUNTY, TENNESSEE NO. 21

22

N

1 Mile

5000 Feet

Scale 1:15840

330 000 FEET

(Joins sheet 18)

395 000 FEET

385 000 FEET

315 000 FEET

(Joins sheet 26)

(Joins sheet 23)

LAKE

COUNTY

RIVER

RHEA

CHICKAMAUGA

TENNESSEE

RUSSELL BRANCH

Colbaugh Hollow

Pineland

Cotton Port Church

COTTON PORT CEMETERY

MT OLIVET CEMETERY

Mt Olivet Church

MEIGS COUNTY, TENNESSEE NO. 22

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 23

335 000 FEET

395 000 FEET

390 000 FEET

350 000 FEET

(Joins sheet 19)

(Joins sheet 22)

(Joins sheet 24)

(Joins sheet 27)

MEIGS COUNTY, TENNESSEE NO. 23

23

N

1 Mile

5000 Feet

Scale 1:15840

Goodfield Church

GOODFIELD CEMETERY

Goodfield

Coldwater Creek

Goodfield Branch

Colbaugh Hollow

RIDGE

NO PONE

HOWSER CEMETERY

DaC2 Ln

MrC

ThB

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 24

24

N

Scale 1:15840

1 Mile

5,000 Feet

0 1000 2000 3000 4000 5000

¼ ½ ¾ 1

(Joins sheet 20)

(Joins sheet 23)

(Joins inset)

(Joins lower left)

(Joins sheet 27)

SeB2 TlB

370 000 FEET

395 000 FEET

390 000 FEET

385 000 FEET

382 000 FEET

360 000 FEET

355 000 FEET

RIDGE

NO PONE

YALLEY

McMINN COUNTY

Coldwater

Branch

Pleasant

PLEASANT HILL CEMETERY

Pleasant Hill Church

3000 AND 5000-FOOT GRID TICKS

MEIGS COUNTY, TENNESSEE NO. 24

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 25

(Joins sheet 21)

295 000 FEET

385 000 FEET

25

N

1 Mile

5000 Feet

Scale 1:15840

MEIGS COUNTY, TENNESSEE NO. 25

RHEA COUNTY TENNESSEE

TENNESSEE RIVER

CHICKAMAUGA LAKE

Garrison Bluff

Hiwassee Island

HIWASSEE SLOUGH

HIWASSEE RIVER

CHICKAMAUGA LAKE

Spring Branch

Chalton

Ro, ClC, TkD, Ch, Eg, DaC2, DaB2, Em, Ne, CoC3, WkD2, WgC, WgE, WgD, WaC, Ln, WvB, WvC2, DcD3, DcC3, DaD2, EsB, EsC, FcE, FcD, Gu, LsE, LtD3, LsD, Be, HsC, DbD2, MtD, MrD2, BoD, SeB2, SeC2, TlB, MnC, En, CaB, WaD, WhD2, HoC, HoB, DdD2, TaC2, HuB, WtB, WvC2, St

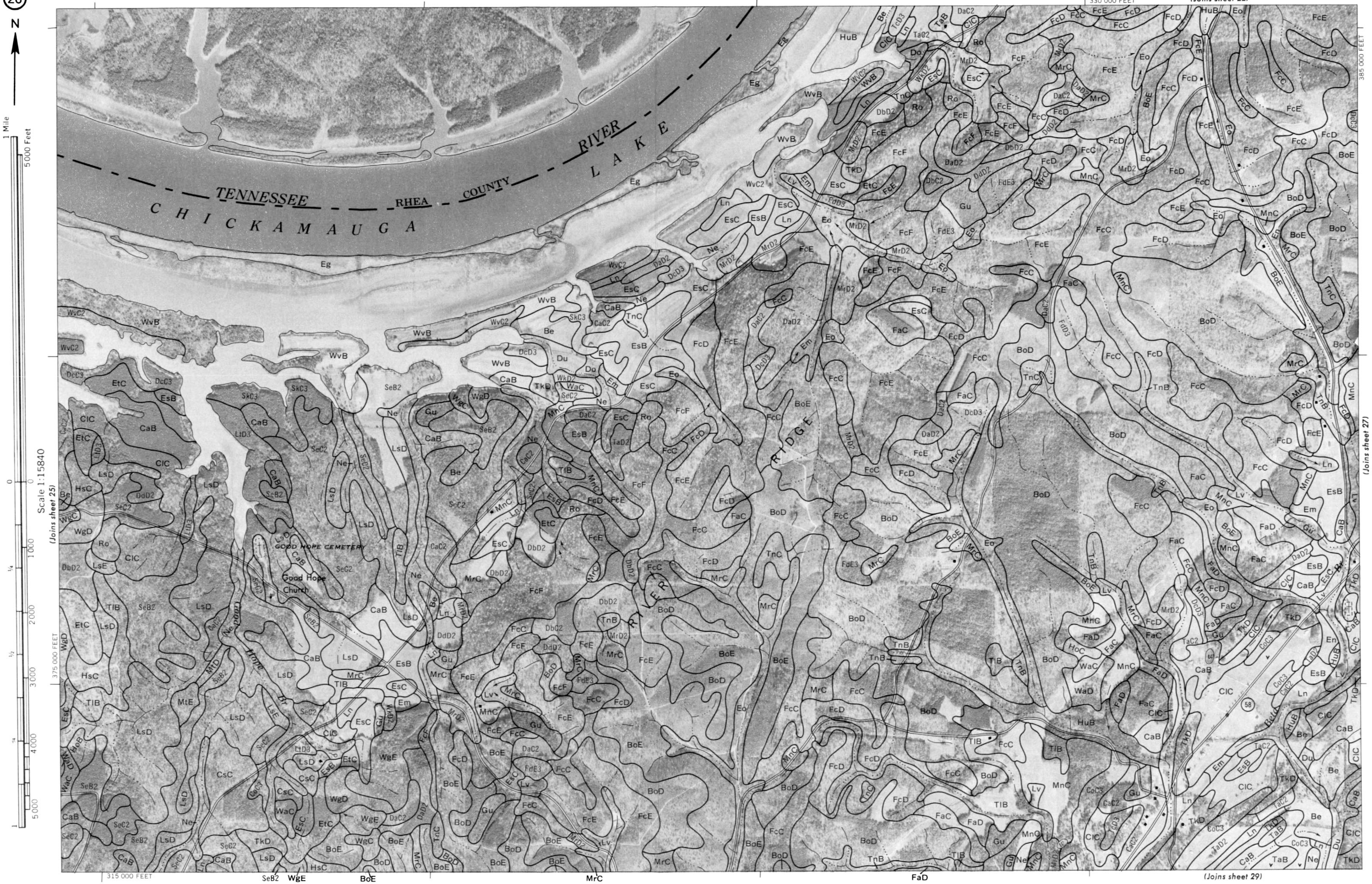
(Joins sheet 26)

(Joins sheet 28)

310 000 FEET

375 000 FEET

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 26



MEIGS COUNTY, TENNESSEE NO. 26

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 27

MEIGS COUNTY, TENNESSEE NO. 27

335 000 FEET

385 000 FEET

(Joins sheet 23)

(Joins sheet 26)

(Joins sheet 30)

(Joins inset, sheet 24)

375 000 FEET

350 000 FEET

27

N

1 Mile

5000 Feet

Scale 1:15840

Allen

Beta

Shiloh Church

SHILOH CEM

Agency Creek

Price Creek

McMINN COUNTY

NO PONE RIDGE


28
N
1 Mile
5000 Feet
Scale 1:15840
(Joins sheet 25)
(Joins inset B, sheet 21)
(Joins sheet 29)
(Joins sheet 31)
310 000 FEET
370 000 FEET
360 000 FEET
295 000 FEET
HIWASSEE
CHICKAMAUGA RIVER
LAKE
POWELL CEMETERY
MC INTURES CEM
HAMILTON COUNTY
Bear Br
Lick Branch
BIRCHWOOD CREEK

N

315 000 FEET

370 000 FEET

330 000 FEET

360 000 FEET

(Joins sheet 26)

(Joins sheet 28)

(Joins sheet 30)

(Joins sheet 32)

MEIGS COUNTY, TENNESSEE NO. 29

Burkett Chapel

Big Spring

Bell Creek

COWAN CEMETERY

CHICKAMAUGA LAKE

HIWASSEE RIVER

AGENCY CREEK

CARMEL RIDGE

1 Mile

5000 Feet

Scale 1:15840

0 1000 2000 3000 4000 5000

30

N

(Joins sheet 27)

LtD3 Do

350 000 FEET

1 Mile

5000 Feet

Scale 1:15840

370 000 FEET

(Joins sheet 29)

360 000 FEET

335 000 FEET

(Joins sheet 33)

MEIGS COUNTY, TENNESSEE NO. 30

295 000 FEET

355 000 FEET

333 000 FEET

328 000 FEET

314 000 FEET

310 000 FEET

(Joins sheet 28)

(Joins sheet 34)

(Joins inset, sheet 34)

(Joins sheet 32)

(Joins sheet 34)

HAMILTON COUNTY

BRADLEY CO

Birchwood Creek

Lick Branch

Gunstocker Creek

Birchwood Ridge

Burdette Ridge

Mangers Pond

4000 AND 5000-FOOT GRID TICKS

31

N

1 Mile

5000 Feet

Scale 1:15840

32

N

(Joins sheet 29)

330 000 FEET

HIWASSEE

CHICKAMAUGA CREEK

RUSSELL BRIDGE

58 BOAT DOCK

AGENCY CREEK

RIVER

LAKE

MT CARMEL RIDGE

MC CLANAHAN CEMETERY

CLINT HILL CEMETERY

East View

East View School

Alford

Brittsville

JOHNSON CEMETERY

Lewis Ln

Sugar Creek

Lick Cr

GUNSTOCKER CREEK

355 000 FEET

350 000 FEET

315 000 FEET

(Joins sheet 31)

(Joins sheet 33)

(Joins sheet 35)

1 Mile

5000 Feet

Scale 1:15840

MEIGS COUNTY, TENNESSEE NO. 32

MEIGS COUNTY, TENNESSEE — SHEET NUMBER 33

33

N

MEIGS COUNTY, TENNESSEE NO. 33

(Joins sheet 32)

335 000 FEET

355 000 FEET

350 000 FEET

(Joins sheet 30)

SnC

Gu

CoC3

Ch

WitB

Gv

HoB

1 Mile

5000 Feet

Scale 1:15840

34

N

Scale 1:15840

1 Mile 5000 Feet

0 0 1/4 1/2 3/4 1

1000 2000 3000 4000 5000

335 000 FEET

300 000 FEET

310 000 FEET

345 000 FEET

325 000 FEET

333 000 FEET

328 000 FEET

315 000 FEET

(Joins sheet 31)

(Joins sheet 35)

(Joins inset, sheet 31)

(Joins inset, sheet 31)

(Joins sheet 35)

Mungers Pond

HAMILTON COUNTY

BRADLEY COUNTY

Gunstocker Creek

Gunstocker Creek

Gunstocker Creek

MEIGS COUNTY, TENNESSEE NO. 34

(Joins sheet 32) (33)

(Joins sheet 34)

(Joins inset, sheet 34)

315 000 FEET

345 000 FEET

335 000 FEET

330 000 FEET

GUNSTOCKER CREEK

East View Church

QUARRY

KNOBS

Fisher Hollow

TEXAS

Sugar Creek

BRADLEY COUNTY

35

N

1 Mile

5000 Feet

Scale 1:15840

MEIGS COUNTY, TENNESSEE NO. 35